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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 2000

HEARINGS

BEFORE A
SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES
ONE HUNDRED SIXTH CONGRESS
FIRST SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 2000

THURSDAY, MARCH 11, 1999.

THE SMITHSONIAN INSTITUTION

WITNESSES

I. MICHAEL HEYMAN, SECRETARY

CONSTANCE B. NEWMAN, UNDER SECRETARY

J. DENNIS O'CONNOR, PROVOST

L. CAROLE WHARTON, DIRECTOR, OFFICE OF PLANNING, MANAGEMENT AND BUDGET

MICHAEL H. ROBINSON, DIRECTOR, NATIONAL ZOOLOGICAL PARK

RICHARD H. RICE, JR., SENIOR FACILITIES SERVICES OFFICER

OPENING REMARKS

Mr. REGULA. The subcommittee will come to order.

We are happy to welcome our guests from the Smithsonian, Mr. Heyman, Ms. Newman, Mr. O'Connor. I am interested in your highest priorities. Obviously, as you know from listening to the news, we may have some pretty challenging fiscal problems this year to meet all the needs that come along, so we will try to do it within the constraints of good management. As you know, I am interested in getting the maintenance under control and that has a high priority, so we will be talking about that in the form of questions. I note that you are requesting an increase of \$40 million over fiscal year 1999, so it is pretty obvious that you have some priorities that are reflected in that \$40 million.

I think we will get on with the hearing. And as far as my comments, they will be embodied in the questions I will be asking.

Mr. Dicks?

Mr. DICKS. Mr. Chairman, I just want to welcome our witnesses today and look forward to the hearing.

Mr. REGULA. Thank you.

Mr. Secretary, your full statement will be made a part of the record and you can comment as you see appropriate.

Secretary HEYMAN. Thank you, Mr. Chairman. Good morning, and good morning to you, Mr. Dicks. I am not going to read this whole statement but I will refer to some portions of it and share them with you, and then, of course, we will be ready for any questions that you have.

SECRETARY HEYMAN'S DEPARTURE

As you know, after considerable deliberation, I informed the Regents of the Smithsonian that I would step down as Secretary at the end of 1999. Of course, I do this with regret but with some pleasant anticipation of getting back to California and starting to do a little bit.

Mr. REGULA. I assume the last week will make you look on it in even more pleasant anticipation because it doesn't snow much there.

Secretary HEYMAN. Not where I live in California. I have really tried to use these years as Secretary for many purposes, but my priority has been to maintain the quality of the programs that we offer for visitors and elsewhere and to carry on first-rate research. I have been equally dedicated to trying to share the experiences of the Smithsonian with people outside of Washington.

AFFILIATIONS PROGRAM

There have been three programs that we have both been expanding and/or we have created in these four to five years. One of them is the Affiliations Program, and that seems to be going great guns. It was created in 1996 by the Regents. We have had now more than 150 inquiries with respect to entering into affiliations with the Smithsonian by local museums or museums that are coming on line. We have got 23 active affiliations under consideration at the moment and 5 have been fully implemented, and you can just feel the momentum increasing. I think that we will find Smithsonian objects around the country in a way that will give access to people who otherwise would not be able to see them. Given the number of objects we have, obviously, to spread them out is a very good idea.

Also in terms of just giving access to the objects themselves, I watched truck load after truck load of objects that were being taken up to Bethlehem, Pennsylvania, for the opening of the National Museum of Industrial History in Bethlehem. That is an exhibit that is going to have a lot of very large artifacts from the Smithsonian and we are curating it also. All of this is at the expense of the National Museum of Industrial History.

Mr. REGULA. Is it open, or when will it be?

Secretary HEYMAN. When do you think that exhibition will open?

Mr. O'CONNOR. Late this year or early next year.

Secretary HEYMAN. So you really can see the manifestation of that in that project especially because there are so many objects involved.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

We have been paying a lot of attention to SITES, which, as you know, is the Smithsonian Institution's Traveling Exhibition Service. Really, a lot of people see SITES shows as they travel around the country. We had 74 exhibitions I believe last year that appeared in about 150 different sites. And we are doing a number of really very interesting ones now. A new one is going to be "Microbes: Invisible Invaders, Amazing Allies," which is going to open here in Washington and then travel. And then, of course, "Earth

2U," the geography show that we have done with the National Geographic Society has just been absolutely sensational and continues. And we are doing one called "American Glass: Masters of the Art." I am just mentioning the larger ones.

In recent years, SITES has developed a rural initiative in partnership with the Federation of State Humanities Councils. It is called Museum on Main Street, and it has brought SITES exhibitions to more than 100 rural communities, many of which are 10,000, 9,000, 3,000 in population. They have created an awful lot of enthusiasm. And "Barn Again" was one that we spoke about last year. It is just a wonderful way for the Smithsonian to touch people who otherwise have really very little access at least to see actual photographs and actual objects.

INTERNET ACCESS

Of course the Internet is growing and growing. I don't think we know where that is going exactly, but we are averaging well over 30 million hits a month. I think there was one month we had 38 million hits. We have all of this material on the Internet and, of course, the potentialities are extraordinary in regards to virtual exhibitions.

Mr. REGULA. Do you have a breakdown on the 38 million—schools, educational, or groups—as opposed to individual hits?

Secretary HEYMAN. Let me ask my expert over here to find out.

Mr. O'CONNOR. We don't have that, Mr. Chairman. What we do know is how many individual units are coming in to create those 38 million hits. That still doesn't tell us precisely how many people are viewing the screens as they come up. It's a tough number to get for us.

Mr. REGULA. I was just curious.

Secretary HEYMAN. In any event, I think that we are just at the beginning of understanding how this is going to impact and affect people in general. I think we should all be very excited about the potentialities of doing education, both informal education and formal education, over the Internet. I was going to mention that, as we all know, the Smithsonian is very involved in informal education; people coming to museums, seeing objects, reading labels, and educating themselves.

FORMAL EDUCATION

But we are also very involved in formal education, as you know, and that goes all the way from the magnet schools that we have been working with in the District of Columbia to a variety of other kinds of programs. One that I will mention that is going to expand immensely is one that the National Museum of Natural History is involved with and it is a partnership with a corporation called Voyager, Inc. And Voyager has been the one that has made the connections with school districts around the country offering after school and summer programs. And we are doing a number of the units—the content of those, and we are mixing a variety of kinds of media—actual objects together with electronic transmission. Those activities are carried on or directed by people in those school districts who go through training programs. I think this kind of use

is just going to increase constantly and I think it is a very important service that the Smithsonian can offer.

VISITORSHIP AT SMITHSONIAN

Let me highlight just a few of the facts about the Smithsonian in the past year. We had over 31 million visits recorded this past year. That was up about 4 percent from the year before. And if you will remember, we went up 15 percent between 1996 and 1997. I think we are reaching our capacity in a way of through-put in the museums, but we have just got a lot of interest in coming to us.

The National Air and Space Museum had almost 10 million visits last year. That, in part, was stimulated by the Star Wars exhibition which ended in January. That attendance is going to go down this year as we don't have that exhibition and as we are doing a lot of renovation in the Air and Space Museum so there is less area within that museum for both people to fit and for new exhibits to be put on. But we have got to replace all that glass, as you know, and replacing that glass is a very big job and you have got to cut off portions of the museum as we are doing that.

IMAX THEATERS

The Air and Space Museum has a wonderful IMAX theater, as you know, and now we have a new IMAX theater on the other side of the Mall at the National Museum of Natural History which opens to the public in May. I want to urge any of you who haven't, to come especially to see "Everest." I think that is one of the most extraordinary IMAX films I have ever seen.

Mr. REGULA. Which place?

Secretary HEYMAN. That is at Air and Space. Based on the last schedule I saw, we do five different shows each day and "Everest" is usually the last show at 6:00 pm. We could make arrangements for any of you who wish to come because it is an extraordinary show.

The first show ever, the one that has inaugurated the IMAX theater over at Natural History, is called "Africa's Elephant Kingdom." I have not seen it myself. I just introduced it and then had to go to something else. But my colleagues have and were very impressed with it.

VISITORSHIP AT THE NATIONAL PORTRAIT GALLERY AND THE NATIONAL MUSEUM OF AMERICAN ART

It is interesting to see that visits to the National Portrait Gallery and the National Museum of American Art have increased as the re-development of the area around the MCI arena has had such an impact with a lot of new restaurants and other activities, and you can see that in the attendance figures at those museums.

EXHIBITIONS

And over this period of time, we have had a number of noteworthy exhibitions, as you know. I am just going to mention two. One is in the Arts and Industries Building right next to the Castle, which is "Speak to My Heart: African American Communities of Faith and Contemporary Society." I don't know if we are breaching

the line, but as you walk into that exhibition you really do feel that you are in a church. The complexity of the way that exhibition is organized gives you that sense.

The other one that I will just mention is the completion now of the Janet Annenberg Hooker Hall of Geology, Gems and Minerals. The last exhibition now has been put into place and that is on rocks. It is called the Rock Hall. I think that whole series of rooms, starting with the Hope diamond and then going to gems, and then going to an absolutely wonderful exhibition of minerals, and then into a mine, and then into the Rock Hall, and then into learning all about tectonic plates, and then going into space with rocks from the Moon and from Mars, et al, I just think that is an absolutely wonderful addition. You can now see as the word gets around that people just kind of home in to that exhibition as they come into the Natural History Museum.

STAR-SPANGLED BANNER

On December 1st, we witnessed the almost flawless, I think completely flawless, takedown of the Star-Spangled Banner from the display in Flag Hall, and that was memorialized by the History Channel, in collaboration with Museum staff, in a documentary. And in October, the preservation project in fact began in earnest when walls were erected to enclose the conservation and exhibition area. You know that eventually, and I think this is going to be in April, we will have it ready. We will be doing the restoration of the flag in an area where people can watch the restoration and the conservation activities occur.

Mr. REGULA. That's great.

Secretary HEYMAN. Those will occur over a two to two-and-a-half year period and they will be fully visible. So people will be able to get a real sense of how you go about a complex project of this sort, which seems to be a really wonderful way to do it. It appears that our funding for this whole project is now secure. So we are pleased with that, obviously.

RESEARCH

I want to mention a couple of things in the research area. One, I just want to focus our attention on the Smithsonian Environmental Research Center that is on the Chesapeake Bay. I have spoken briefly about that in years past, but we now have a new education center there, that was mostly privately financed, called the Philip D. Reed Education Center. It is making it much easier to bring groups of school children down from as far away as the District of Columbia to be educated in the activities that are going on at that center. And it is also useful for other kinds of activities.

SERC really provides a unique opportunity to study a variety of things, and I will just mention two. The project that has been ongoing for quite some time is to look at what is happening to the Chesapeake Bay as various non-native species come out of the ballast of ships that load in ports in the Chesapeake. This past year I think has been the year in which we have identified non-native species of bacteria that can cause cholera that have been put into the Bay. We have been working in concert with others on this research for some long period of time. It is a very important research

matter, if we all remember what happened to the Great Lakes with mussels that came in from Asia. Most of the non-native species die because they are in an environment that is not supportive to them, but some of them can really flourish because they have no competitors. So we are doing quite a bit on that.

The other thing that we are doing that seems to me a really wonderful research project in terms of its implications is that we have been doing a lot of research on how to keep pesticides and like substances that you use on agricultural land from going in through estuarine systems into bodies of water like the Chesapeake. What we have been doing is cultivating mostly forest strips between the cultivated land and the body of water. The absorptive power, we have found out, in doing that kind of planting has been considerable in order to protect the estuarine from runoffs of materials that are bad for it.

We have made a lot of other noted research finds in this past year, as we have in the past. They have been at SAO, which is the Smithsonian Astrophysical Observatory of such extraordinary quality. They have been at the Smithsonian Tropical Research Institute. There have just been many and we are happy to talk about any of those in response to questions that might interest you.

SMITHSONIAN BUDGET REQUEST

Let me turn now very briefly to our request for the fiscal year 2000. As you noted, we are asking for an increase that is not insubstantial, not overwhelming but not insubstantial, with respect to the fiscal year 1999 budget. We have in this budget \$380.5 million for Salaries and Expenses, and \$66.9 million for the capital program which includes R&R. In Salaries and Expenses, 58 percent of that requested increase is for mandatory costs. If you ask me, as you do each year, what is my top priority, my top priority is the mandatories so that we can keep ourselves even in terms of the noncontrollable increases in costs on our base.

We are asking for \$14 million for program priorities in addition to the mandatories. Those include four activities. One is what we believe is the necessary increase for the National Museum of the American Indian, largely to staff up the Cultural Resources Center which you visited at Suitland, and to get on with bringing the artifacts down from New York to Suitland, and some exhibition preparation for the opening of the National Museum on the Mall for which we are coming to the final Federal increment. That together with R&R are my second and real priorities in terms of the overall budget, although everything that we have in here is very important to us.

Second, among program priorities, is an increase for access to collections information, with much of that going into digitizing our basic records, the objects in the collections, because that is the center of the infrastructure for the whole of the Internet. We have got to get more things that we can put on line.

Third is \$2 million to prepare artifacts for relocation from the Garber Facility to the Dulles Center of the National Air and Space Museum.

And finally, a \$2 million sum for modernization of the security system of the Institution. As you know, because we have discussed

it before, that has been going along and the Under Secretary is here to answer any questions with regard to that.

On the capital side, the two major issues are the National Museum of the American Indian. The final Federal increment is being sought this year. That is \$13 million for construction and the balance of \$6 million for equipment. I have said to myself and to the public that being able to break ground on that at least this spring is a very high priority of us at the Smithsonian. The more I have thought about it, the more I have thought that when that is finally constructed and it has got the exhibitions in it, it is going to be one of the two or three most visited museums of the Smithsonian. The fascination with regard to Indian cultures and Indian objects is extraordinary. I was reminded of that when I keynoted a conference last week in Munich. We will get a lot of German visitors, let me tell you, because their fascination with Native American materials is just extraordinary.

The other, of course, is the R&R budget. You and I both have been trying to work on that to get it up to the point where it is a self-sustaining operation, that our base can cover our needs over time with regard to our buildings. Now that we have added the Zoo, which we hadn't because of the manner in which we had budgeted previously, together with the rest of the Institution, for \$60 million a year we can take care of it all. And if we can get up there, and we have been getting up there with your help, we will really feel quite confident about what we can do.

Most specifically, a portion of what we want to use monies this year for is the continuation of the major capital renewal projects at Natural History. It is such an enormous place there is an ongoing need to continue to upgrade. But one of the major things that we are talking about is the Patent Office Building. We really want to start on that in fiscal year 2000. We have done some of it already, minor amounts. That whole building needs a major renovation and repair. We have costed it at about \$60 million. My colleagues think that is too little and my view has been that we will manage to do it on that. We are asking you not only in terms of this R&R sum but to do advanced appropriations so that we can do a \$60 million contract in one. I hope that is going to be possible. I know there are difficulties in doing that but, nevertheless, that is the request that we are making.

SECRETARY HEYMAN'S PRIORITIES

Well, as you can see, Mr. Chairman, and gentlemen, we have had an active year. I personally intend to have a very active year in this final year of mine. I have four key priorities. I have mentioned one already, which is to participate in the ground-breaking for the National Museum of the American Indian on the Mall and try to take the steps that are necessary to assure that we are going to open in 2002. As we all know, we went through a dispute with the architects, in fact there is still some litigation with respect to that. But I think we are doing pretty well there, having been deposed two days by myself I had the sense that we were. But in any event, we have had very little slippage in terms of time because of that problem. So all of us who have been working on this at the Institu-

tion think that it is within reason to believe we can bring this on line and open it in 2002.

Secondly, I really expect to see that the Institution's capital campaign is well-defined. I don't know if we will have announced it yet. The way that capital campaigns go, you do a lot of money raising during the quiet period before you make the actual public announcement. But I really want to see that in good shape. I must say that I was very worried about some aspects of it. One of those was with regard to the large amount of money we are going to have to raise or are raising for the Air and Space Museum. We have now reorganized that office in Air and Space and brought in some help from outside. I am much more confident now that we are going to be able to reach that goal, more so than I was the last time you and I talked about that.

Thirdly, I want to bring to fruition the acquisition of an additional facility for the activities now in the Patent Office Building—on Smithsonian money, not on Federal money. You saw in the paper that we struck out in our attempt to acquire the Woodward and Lothrop building. We were about \$2.8 million below the bid of the person who got it. But what we found out at the last moment, which was very chastening with respect to our opportunity, was that the Washington Opera was requiring that \$2 million be put down and considered forfeitable if one did not go through with the contract. Our view was that there should be a due diligence period during which we could make a deeper inquiry into the condition of the building. And so that \$2 million seemed like an option and I think we would have had a lot of difficulty in meeting that. We are now very involved in looking at other buildings and areas in the vicinity. They won't be as good as far as our original notion was at Woodward and Lothrop but I think we can do well. So I hope we will be coming back to the Regents and to you here with an alternative proposal shortly.

Finally, I intend to have really up and working the new business organization within the Smithsonian that will take over a lot of the business activities.

So, it has been a pleasure speaking with you. We look forward to questions. And I'll miss this next year. [Laughter.]

Mr. REGULA. We will miss you.

[The Secretary's formal statement follows:]

SMITHSONIAN INSTITUTION

Hearing Before the
Subcommittee on Interior and Related Agencies
Committee on Appropriations
United States House of Representatives
Honorable, Ralph Regula, Chairman
March 11, 1999
on the Fiscal Year 2000 Budget Request to Congress

WITNESSES

I. Michael Heyman, Secretary
Constance B. Newman, Under Secretary
J. Dennis O'Connor, Provost
L. Carole Wharton, Director, Office of Planning Management and Budget
Michael H. Robinson, Director, National Zoological Park
Richard H. Rice, Jr., Senior Facilities Services Officer

Testimony of I. Michael Heyman, Secretary
 Smithsonian Institution
 before the
 House Interior Appropriations Subcommittee
 March 11, 1999

Good morning, Mr. Chairman and Members of the Subcommittee. I appreciate the opportunity to appear before you today on behalf of the Smithsonian Institution and to present a summary of our activities and our fiscal year 2000 budget request.

As you may know, after considerable deliberation, I have informed the Smithsonian Board of Regents that I will step down as Secretary at the end of 1999. I do this with regret, of course, but also with pleasant anticipation. I regret departing from the Institution that is so important in our national life, and from those people who are responsible for what it does. But I look forward to returning home to California and reestablishing my ties to the University of California and the San Francisco Bay Area.

I have tried to use my years as Secretary to promote a greater sense of the combined strength of the Smithsonian as a positive force in providing quality research and education programs for the nation. My priority as Secretary has been to maintain the quality of the programs offered by the Smithsonian and to enhance the visitor's experience while touring our museums and utilizing our research facilities. I have been equally dedicated to sharing that experience with people outside of Washington and to making our programs and collections more accessible to the nation. Increasing the Institution's outreach to other educational institutions and the general public is crucial in meeting this priority.

Three Smithsonian programs that seek to promote outreach to every American have been particularly important to me during my tenure with the Institution – the Affiliations Program, the Smithsonian Institution Traveling Exhibition Service (SITES), and electronic access to the collections. The goal of the Affiliations Program is to promote greater public access to the Institution's collections by providing an alternative means for their exhibition outside of Washington. Since the inception of the Affiliations Program in 1996, there have been more than 150 separate inquiries from organizations interested in forming affiliations. There are currently 23 active affiliations projects and five have been fully implemented. Recently a long-term agreement with the National Museum of Industrial History in Bethlehem, Pennsylvania, was finalized, and a 19th-century locomotive and hundreds of other industrial artifacts from our collections were moved to that site.

A long-time Smithsonian program, SITES, has been sharing the wealth of the Institution's collections, research, and exhibitions with audiences around the world through short-term exhibitions of collections and representations. Each year, millions of people beyond Washington, D.C., experience these programs. SITES popularity has been significantly enhanced as it

continues to secure substantial corporate and foundation support for its programs. Two new projects highlight this success: a grant to host an interactive traveling science exhibition *Microbes: Invisible Invaders*, *Amazing Allies*, which opens Memorial Day weekend on the National Mall and an alliance with a theme park located in Branson, Missouri, to present the children's geography exhibition, *Earth 2U*, *Exploring Geography* and the exhibition, *American Glass: Masters of the Art*.

In recent years, SITES has developed a rural initiative in partnership with the Federation of State Humanities Councils. Called Museum on Main Street, this program has brought SITES exhibitions to more than 100 rural communities across the country and has generated tremendous enthusiasm and participation.

In many ways, Internet-based learning is rapidly changing the nature and scope of education in America. The Smithsonian has witnessed a dramatic increase in the number of people who access our Internet website. At a rate already in excess of 30 million "hits" per month, our objects, databases, research, virtual exhibitions, lesson plans, and visitor services are being made available to schools, businesses, libraries, and individuals around the nation and the world. It is our goal to bring a large portion of our display collections on-line, making it possible for anyone with access to a computer to see and study these objects. We believe this evolving technology greatly enhances our ability to make Smithsonian programs and museums publicly accessible. We are pleased that the Administration has recognized our efforts in this area and has identified the Smithsonian as a key partner in its Digital Library initiative.

The cornerstone of these important institutional outreach activities is education. The National Museum of Natural History (NMNH) is expanding its efforts to become a national hub for science education. Last fall, six school districts around the nation began testing *Mammals in Schools*, a program to promote museum-style, object-based learning in middle school science classes. An electronic classroom with two-way videoconferencing links between the Museum's exhibition labs and classrooms enables teachers and NMNH scientists to assist students as they analyze mammal specimens, study their habitats, and build exhibitions based on what they have learned. Electronic field trips that simultaneously link several classrooms to Museum science labs via videoconferencing equipment are also being developed. For more than a year, the Museum has been providing an after-school learning program based on NMNH research on the ice age which has been presented to more than 10,000 young people in 25 states.

Also on the education front, the National Science Resources Center (NSRC) received a grant in support of its Leadership and Assistance for Science Education Reform (LASER) Project. During the next six years, LASER will help local leaders introduce and implement inquiry-centered kindergarten through 8th-grade science curriculum materials in more than 300 school districts that serve approximately one million students nationwide. To accomplish this, NSRC has formed partnerships with eight regional sites located in Alabama, California, New Jersey, Oklahoma, Pennsylvania, Rhode Island, South Carolina, and Washington.

Now, let me highlight some of the Smithsonian's achievements in the past year. We are very pleased to report that there were more than 31 million visits recorded at the Smithsonian museums and the National Zoo in 1998, an increase of more than 4 percent from the 1997 total and the highest recorded total attendance since 1984.

The National Air and Space Museum, the most visited museum in the world, attracted almost 10 million visits in 1998. This level of attendance last year was due primarily to the success of *Star Wars: The Magic of Myth*, an exhibition commemorating the 20th anniversary of the *Star Wars* trilogy. During its 15-month run, nearly one million people viewed the exhibit.

The Air and Space Museum has also enjoyed the success of the IMAX feature *Everest* at the Langley Theater. Since the movie premiered in March 1998, more than 110,000 people have attended, making *Everest* the best-selling film ever in the evening schedule.

Visits to the National Museum of American Art and the National Portrait Gallery increased last year, in part due to the revival of downtown Washington and the 7th Street art district. Looking to build on this momentum, both Museums are now participating in Third Thursday, a monthly art celebration organized by the downtown business and arts community, with special evening hours and guest lectures.

In the past year, a number of exhibitions suggested the array of programs available at the Smithsonian: *Theodore Roosevelt - Icon of the American Century*, *The Jewels of Lalique*, *Celebrity Caricature in America*, *Faces of Time: 75 Years of Portraits from Time Magazine*, and *Speak to My Heart: African American Communities of Faith and Contemporary Society*. Also, a series of concerts was preformed by the Smithsonian Jazz Masterworks Orchestra to mark the 100th anniversary of the birth of Duke Ellington. In November 1998, the "Rock Hall" opened at the NMNH, completing the final piece of the major, permanent exhibition complex that makes up the *Janet Annenberg Hooker Hall of Geology, Gems and Minerals*.

On December 1, 1998, the National Museum of American History witnessed a virtually flawless "takedown" of the Star-Spangled Banner from its display in Flag Hall to begin a major conservation and preservation project. The History Channel, in collaboration with Museum staff, aired a documentary on the history of the flag and the preservation project, which is the largest textile conservation project ever undertaken by a museum. In October, the preservation project began in earnest when walls were erected to enclose the conservation and exhibition area, and a NASA expert, using near-infrared spectrometry, began assessing the amount of moisture and surface dirt on the flag. Currently, the flag is protected in a specially built 30-foot container while construction of the conservation lab and exhibition is completed. The new space is slated to open in April. Once the flag is relocated to the conservation lab, visitors will have the opportunity to observe the preservation project in progress.

After a four-year renovation, the Cooper-Hewitt, National Design Museum and its Design Resource Center in New York re-opened in June 1998. With its state-of-the-art environmental

systems and storage equipment, the Center is a model for managing museum collections and making them more accessible to the public, while maintaining the integrity of the historic structure.

The Smithsonian Environmental Research Center (SERC) in Edgewater, Maryland, ushered in a new era of learning for school groups with the opening of its new Philip D. Reed Education Center. The Center also doubles as a visitor center, featuring an orientation hall, a teacher resource library, office space, and an 80-seat multipurpose room. In order to provide school groups and the public with the latest information about SERC research, the building will be connected to SERC labs via video and audio networks.

SERC's facility on the Chesapeake Bay provides a unique opportunity to study a variety of interconnected ecosystems whose impact is felt across the globe. Scientists at SERC have identified non-native species of bacteria, from ballast water on ships in the Chesapeake Bay, that can cause cholera. This is part of the largest research project in the United States dealing with the origin and impact of alien, invasive species in coastal and estuarine systems. Non-native species can endanger native species, disrupt food chains, and cause environmental and infrastructure damage exceeding, according to one estimate, \$120 billion in 1998. This research has produced tools and strategies that are being tested as a means to control invasive species. SERC is also playing a lead role in research that has demonstrated that streamside forests and restored wetlands can reduce nutrient runoff into coastal waters. In addition, collaboration with other institutions has enabled SERC to find ways to detect and quantify the toxic organism *Pfiesteria*, which can kill fish and poison humans.

In the past year the Smithsonian has made tremendous advances in many other ongoing research efforts. At the Smithsonian Astrophysical Observatory (SAO), in partnership with the Harvard College Observatory, scientists' have developed low-field magnetic resonance imaging (MRI) which extends the technology to areas in the human body that could not be imaged previously, such as the lungs and sinuses. This technology will have applications ranging from detection of hard-to-reach tumors to use by people with pacemakers.

Research efforts at the Smithsonian benefitted from John Glenn's historic return trip to space last fall. The Shuttle flight carried Spartan 210, a solar physics experiment package that included an ultraviolet coronagraph spectrometer (UVCS) built by SAO, to observe the Sun's outer atmosphere. Also, NASA's Submillimeter Wave Astronomy Satellite (SWAS) carried an instrument, designed by SAO scientists, to observe the heavens in submillimeter radiation and study the birth of stars.

At the Smithsonian Tropical Research Institute (STRI) a study has revealed new data on conditions that support species diversity in ecological systems such as rainforests, grasslands, coral reefs, and lakes. The research conducted in a Panamanian rainforest on Barro Colorado Island, has led to developing methods for sustaining endangered species that are threatened with depletion and destruction.

While research and planning for the 1999 Smithsonian Folklife Festival, featuring the State of New Hampshire, is well under way, the Center for Folklife and Cultural Heritage is still experiencing the positive impact of previous years. The 1997 Festival featuring Mississippi and the 1998 Festival featuring Wisconsin were both replicated back home in the two states last summer. The Folklife Center is currently completing work on a cultural education kit for school children in the Mississippi Delta growing out of the 1997 Festival. A documentary, *Wisconsin Folks*, based on the 1998 Festival, aired on Wisconsin public television stations in December. In the year 2000, the Folklife Festival will feature the District of Columbia, the Rio Grande/Rio Bravo Basin (largely Texas and New Mexico), and a program on Tibetan culture.

Now to summarize the Smithsonian's request for fiscal year 2000: for all operating and capital accounts we seek a total of \$447.4 million, an increase of \$35.1 million above the fiscal year 1999 appropriation. Of this amount, \$380.5 million is for Salaries and Expenses, and \$66.9 million is for our capital program.

Of the requested increase in the Salaries and Benefits account, 58 percent is attributable to mandatory costs for sustaining base operations and the remainder is for priority program requirements. For fiscal year 2000 these program priorities total \$14 million and 25 positions, and include activities related to the Dulles Center of the National Air and Space Museum, the Mall museum building of the National Museum of the American Indian, access to collections information, and modernization of the Institution's security system.

For the Dulles Center, \$2 million and 14 term positions would be used for the preparation of artifacts for relocation from the Garber Facility in Suitland, Maryland, to the new site in Virginia.

For the National Museum of the American Indian, \$5 million and 11 positions are required for operational support at the new Cultural Resources Center in Suitland, Maryland, the move of objects from New York to Suitland, and exhibition development associated with the opening of the Mall museum.

For access to collections information, \$5 million is needed to support the electronic capture and digitization of object and specimen images, enrichment of related data, and storage, as well as retrieval, of that material.

For security system modernization, \$2 million is necessary to continue replacement of the Institution's current security system, and to provide engineering support for and staff training on a new system as well as its installation, testing, and documentation.

In this request the Institution has consolidated its capital accounts, thus unifying all repair and restoration activity in one account and all construction in a separate account. Within the consolidated accounts, \$47.9 million is identified for Repair, Restoration, and Alteration of Facilities and \$19 million is identified for Construction.

The \$47.9 million requested for repair and restoration will target:

- the repair and restoration of buildings on and near the Mall as well as buildings at the National Zoological Park
- major capital renewal projects at the National Museum of Natural History and the renovation of the old Patent Office Building, which houses the National Museum of American Art and the National Portrait Gallery

For renovation of the Patent Office Building the Institution requires \$8 million in fiscal year 2000 and requests advance appropriations in order to award a single \$60 million contract for this project. Receipt of the additional advance funds will allow cost-effective and time-critical renewal of the structure. We propose that \$17 million of the advance appropriation become available on October 1, 2000; another \$17 million on October 1, 2001; and \$18 million on October 1, 2002.

Finally, in the Construction account, the Institution requests \$19 million for the Mall museum building of the National Museum of the American Indian. Of that amount, \$13 million will be used to complete construction and \$6 million will be used to equip the building. This final increment of funding will complete the Federal share – two-thirds of the building cost – authorized in the legislation enacted on November 28, 1989. The other third, which totals \$36.7 million, has been raised through the generosity of individuals, tribes, corporations, and foundations in this country and around the world.

As you can see, Mr. Chairman, 1998 was an active year for the Smithsonian and I personally intend to have a very active final year at the Smithsonian. There are four chief priorities on my agenda. First, I plan on participating in the groundbreaking for the National Museum of the American Indian Mall museum this spring and taking all steps necessary to assure that it will open before 2003. Secondly, I expect to see that the Institution's capital campaign is well-defined. Thirdly, I want to bring to fruition the acquisition of an additional facility in close proximity to downtown Washington for the activities presently located in the Patent Office Building, with settled plans for renovation and appropriate organizations and programs. Finally, I intend to establish a new organization within the Smithsonian to carry on our business activities by appointing its board of directors and, at their recommendation, the chief operating officer.

Mr. Chairman, I appreciate the opportunity to speak with you today, and I have enjoyed working with you for the past five years. I would be pleased to respond to any questions you and the other Members of the Subcommittee may have concerning our fiscal year 2000 budget request or on any other matter related to the Smithsonian Institution. Thank you.

January 1999

I. Michael Heyman, Secretary
Smithsonian Institution

I. Michael Heyman became the 10th secretary of the Smithsonian Institution on Sept. 19, 1994. He heads a complex of 16 museums and galleries and the National Zoological Park, as well as scientific and cultural research facilities in 10 states and the Republic of Panama.

Heyman served as chancellor of the University of California at Berkeley from 1980 to 1990. He began his career at Berkeley in 1959 as an acting professor of law and became a full professor in 1961. His distinguished teaching career has included service as a visiting professor of law at Yale (1963-1964) and at Stanford (1971-1972).

A strong leader and active fund-raiser, Heyman strengthened Berkeley's biosciences departments and successfully promoted ethnic diversification of the undergraduate student body while maintaining high academic standards. The university maintains several large museums and, as chancellor, he actively participated in their supervision.

He was counselor to Secretary of the Interior Bruce Babbitt as well as deputy assistant secretary for policy at Interior from 1993 to 1994, and is a member of the state bars of California and New York.

Born on May 30, 1930, in New York City, Heyman was educated at Dartmouth College, earning a bachelor's degree in government in 1951. After a year in Washington as legislative assistant to Sen. Irving M. Ives of New York, he served in the United States Marines as a first lieutenant on active duty from 1951 to 1953, and as a captain in the reserves from 1953 to 1958. Heyman received his juris doctor in 1956 from Yale University Law School, where he was editor of the Yale Law Journal. He was an associate with the firm of Carter, Ledyard and Milburn in New York City from 1956 to 1957. He was chief law clerk to Chief Justice Earl Warren from 1958 to 1959.

Over the years, Heyman has served on and chaired numerous boards and commissions, including almost four years as a member of the Smithsonian's Board of Regents (1990-1994). He has dedicated more than a decade of service to his alma mater—Dartmouth—as a member of its board of trustees from 1982 to 1993 and as chairman of the board from 1991 to 1993. Heyman also has been a member of the board of trustees of the Lawyers' Committee for Civil Rights under Law since 1977.

Heyman is married to Therese Thau Heyman, senior curator on leave from the Oakland Museum in California. Their son, James, is a physicist and teacher.

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NOTE TO EDITORS For more information, contact David Umansky, (202) 357-2627 ext 106

CONSTANCE BERRY NEWMAN

Constance Berry Newman became Under Secretary of the Smithsonian Institution in July, 1992. She was Director of the Office of Personnel Management from June, 1989 to June, 1992. For more than 20 years she managed public and private organizations. Among her major management positions were: Assistant Secretary of the United States Department of Housing and Urban Development, Director of VISTA, and President of the Newman & Hermanson Company. She was also Commissioner and Vice-Chairman of the Consumer Product Safety Commission.

From 1987 to 1988, Ms. Newman worked for the Government of Lesotho as a Cooperative Housing Foundation consultant to advise the Ministry of Interior regarding the establishment of a housing corporation to receive World Bank funding.

During her public career which began in 1961, Ms. Newman worked both as a career public servant and a political appointee with four Presidential appointments, three of which were confirmed by the Senate.

Ms. Newman was a Woodrow Wilson Visiting Fellow from 1977 to 1985 and a member of the Adjunct Faculty at the Kennedy School, Harvard University from 1979 to 1982. She has received an Honorary Doctor of Laws from her Alma Mater, Bates College, Amherst College and Central State University. In addition to receiving an A.B. from Bates College, she received a Bachelor of Science in Law degree from the University of Minnesota Law School. In 1985, she received the Secretary of Defense Medal for Outstanding Public Service. At present she serves on the Board of Trustees of The Brookings Institution and Bates College and is a member of the District of Columbia Financial Responsibility and Management Assistance Authority.

J. DENNIS O'CONNOR
PROVOST, SMITHSONIAN INSTITUTION

J. Dennis O'Connor joined the Smithsonian Institution in December 1995 as the Institution's first Provost (chief programs officer). He is responsible for central planning, integration and oversight of research, exhibitions and education of the largest museum and research complex in the world.

Dr. O'Connor is a prominent biologist and educational leader who came to the Smithsonian from the University of Pittsburgh, where he served as Chancellor from 1991 to 1995. A native of Chicago, he earned a bachelor's degree from Loyola University, a master's degree from DePaul University, and a Ph.D. from Northwestern University. Dr. O'Connor has served as Dean of the Life Sciences at the University of California, Los Angeles, and at the University of North Carolina, Vice Chancellor of Research and Graduate Studies and Dean of the Graduate School, and as Vice Chancellor of Academic Affairs and Provost.

L. Carole Wharton
Director, Office of Planning, Management and Budget
The Smithsonian Institution
Washington, D.C.

Dr. L. Carole Wharton was appointed to the position of Director of the Office of Planning, Management and Budget in December 1991. Prior to joining the Smithsonian, she spent three years as the Chief Planning Officer at Drexel University in Philadelphia. In that role she was responsible for leading the university's first strategic planning process, developing an institutional research office, and coordinating budget projections and priority setting. Before going to Drexel, she was engaged in planning activities at the University of Maryland Central Administration, serving over six years as the Director of Capital Planning. In that position, she was responsible for planning, programming, and budgeting of all university facilities, as well as for the acquisition and disposition of real properties.

Dr. Wharton has also served as Assistant Dean of Academic Development at St. Mary's College of Maryland, Dean of Students at Marjorie Webster College in Washington, D.C., and as a faculty member at Columbus College in Georgia.

A native of Virginia, Dr. Wharton holds a B.A. from Emory and Henry College, an M.A. from Florida State University, and an Ed.D. from The George Washington University.

Michael H. Robinson
Director, National Zoological Park
Smithsonian Institution

Michael H. Robinson, Director of the Smithsonian Institution's National Zoological Park, is an animal behaviourist and a tropical biologist. Immediately prior to his appointment to the National Zoo in May 1984, Dr. Robinson served as Acting Director and Deputy Director of the Smithsonian Tropical Research Institute in Panama, which institution he joined in 1966 as a tropical biologist. He received his Doctor of Philosophy from Oxford University after being awarded his Bachelor of Science, Summa Cum Laude, from the University of Wales. His scientific interests include predator-prey interactions, evolution of adaptations, tropical biology, courtship and mating behaviour, and freshwater biology. He is the author of more than 130 scientific papers and articles including a book on the courtship and mating behaviour of spiders.

RICHARD H. RICE, JR.

Richard H. Rice, Jr., was Acting Director of Facilities Services from April 1995 until January 1996, at which time the title was changed to Senior Facilities Services Officer and he was named to the permanent position.

Mr. Rice, a Registered Professional Engineer, joined the Smithsonian Institution after a distinguished career in the United States Navy, his last assignment being in the Office of the Secretary of Defense.

Mr. Rice's education includes an M.S. in Civil Engineering from Stanford University, an M.S. in Ocean Engineering from the University of Miami, an M.B.A. from Golden Gate University, a B.S. from the United States Military Academy, and completion of the Management Program for Executives at the University of Pittsburgh.

He is the designated Safety and Health Official for the Smithsonian, and heads the Facilities Services Group, comprising more than fifteen hundred employees of the Office of Physical Plant, Office of Protection Services, and Office of Environmental Management and Safety.

Mr. REGULA. Thank you.

The subcommittee will suspend to go vote and then come back for questions.

[Recess.]

SECRETARY HEYMAN'S LEGACY

Mr. REGULA. The subcommittee will reconvene.

We are going to have five votes here shortly so we will have to work around that and get some of the issues out of the way quickly. First of all, I just want to express my regret that you are going to be leaving. I think you have done a terrific job.

Secretary HEYMAN. Thank you, Mr. Chairman.

Mr. REGULA. And probably one of your greatest legacies will be a good team that you are leaving that can carry on and that, more than anything, will ensure that what you have accomplished will have continuity.

Secretary HEYMAN. Thank you very much.

Mr. REGULA. I have a county out in my area that wants to go into interactive TV, and they want a grant. They are saying one of the most positive things that they will be able to do if they get this for the schools is to hook up with the Smithsonian. So that is in their grant request. I think that is a nice compliment to what you have accomplished.

Secretary HEYMAN. That is great.

Mr. REGULA. I note from your comments on the affiliations, it is a good program and, of course, the First Lady's Library in the McKinley home in Canton, you've been there, is the legatee of some of what you have done.

FARM PROGRAM AT THE ZOO

I have a number of questions. First, how are we doing with the zoo farm program?

Secretary HEYMAN. Well, we are waiting for somebody to give us some money, Mr. Regula.

Mr. REGULA. I am working on that.

Secretary HEYMAN. We are ready to carry on.

Mr. REGULA. You are ready to go if you just get the funding?

Secretary HEYMAN. Yes. That is right. Maybe you could get Mr. Gingrich to come back and do a little work for us on that.

Mr. REGULA. I think that is a possibility. He is a good fund-raiser.

NATIONAL AIR AND SPACE MUSEUM—DULLES CENTER

Let's do Dulles first. You have asked for \$2 million for collections preparation. My understanding at the beginning of the project was that annual operations would be non-Federal. Has something changed? Or don't you consider that part of the annual operating cost?

Secretary HEYMAN. I haven't thought about it that way. I really thought about that as activity that is going on at Garber in preparation for Dulles.

Mr. REGULA. So this would include rehabilitating the airplanes?

Secretary HEYMAN. That's right.

Mr. REGULA. I know you have a lot of them out there.

Secretary HEYMAN. We are going to move 160 major air and space craft over. We figure that with this kind of money we can accelerate to do four planes a month, get four ready a month. That is going to be taking a long time. Hopefully, we open Dulles at the right time, which would be on the 100th anniversary of flight. We would really like to be able to populate that with quite a few aircraft. Consequently, we have got to start now to up the activity that is occurring over at Garber.

Mr. REGULA. Now you did get \$6 million in the ISTEA or TEA-21 bill for the Air and Space Museum. Is that available, and could that money be used for your move?

Secretary HEYMAN. Well, remember, it was transportation. So half of that amount is going to Air and Space and they are using a portion of that also for these purposes and a portion of that for upgrading the Air Transportation Hall. The other half is going to the National Museum of American History which is using it to upgrade the Rail exhibition. So about half of what we are getting is going into this.

Mr. REGULA. So it would be added to the pool, the \$2 million?

Secretary HEYMAN. That's right.

DULLES CENTER—PRIVATE FUNDING

Mr. REGULA. How is the private fundraising going? I know you counted on \$130 million. Of that amount, how much has been raised?

Secretary HEYMAN. Well, we are at about \$20 to \$25 million. But I put a lot of personal work in, as well as Bob Hanle has, with the Air and Space Museum over the last month and I now have a confidence with respect to really starting to raise serious money. I think we have got some strategies now that look very promising. So I really am now optimistic about it.

Mr. REGULA. As you know, the State of Virginia made several commitments financially. Are they coming through on their promise?

Secretary HEYMAN. As far as I know, they are coming through completely on their commitments. That is one of the stimulants for us to really make sure we do after their expenditures.

IMPACT OF SMITHSONIAN RESEARCH ON THE PUBLIC

Mr. REGULA. Research. How do your research projects have an impact on the public?

Secretary HEYMAN. I am going to ask Dennis to address the research.

Mr. REGULA. It is a pretty sizeable amount. You have given some illustrations in your testimony as to value of it. How does it touch the life of somebody in Canton, Ohio?

Mr. O'CONNOR. Mr. Chairman, the Secretary certainly gave one example, the Chesapeake Bay and the studies that are going on there. We are also doing some interesting work in various forests around the world. One of the things that we are doing is simply blocking off anywhere from one hectare to five hectares or sometimes larger and going in and doing a complete census of all the plants that have a diameter of about 10 centimeters. It may seem

as though all we are doing is taking a census, but if you do that over time what it begins to tell you, if you look and see that some plants only have very large diameters, that means that the younger plants aren't surviving for some reason and growing up to be older plants. Likewise, if in particular species all you see are very small plants and you never see the larger diameter plants, it means that although the small ones are getting started, they are not growing to maturity. And one needs to then go back in with this kind of information and ask what could possibly be impacting that particular forest area that way.

Another I think really wonderful set of observations has to do with the ability of plants in various environments and under different conditions to absorb CO_2 . Consequently, down at our Tropical Research Institute we have areas that have various kinds of CO_2 enhancers in the environment. Right now, we are at a stage where we are studying the instrumentation to be sure that under both windy conditions and under raining conditions that we can elevate the CO_2 for long periods of time. If we are able to do that, then we will be able to see what the effect of elevated CO_2 has on different kinds of forest species.

Mr. REGULA. Is this your cooperative effort with the DOE, the Department of Energy?

Mr. O'CONNOR. That is one of the cooperative agencies, that is correct.

Mr. REGULA. Does any of your work with forestry overlap with the Department of Agriculture's Forest Service?

Mr. O'CONNOR. Some of it does. Certainly, the example that the Secretary gave about the forest next to the stream land out at SERC has had that cooperation.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY EDUCATIONAL PROGRAMS

Mr. REGULA. I understand that the Astrophysical Observatory in Massachusetts has several programs to link the classrooms with the stars, and that sort of fits with what I mentioned earlier. Tell us a little about that.

Mr. O'CONNOR. One of them is really a fascinating one. They have five small telescopes in various locations—Alaska, Cambridge, Massachusetts, and other locations—that students in classrooms can regulate over the Internet so that the students can, in fact, focus these telescopes on particular parts of the sky, take the images, bring them down, study them, look at that same part of the heavens a month later or six months later to see the changes in the heavens. It is all done over the Internet with remote telescopes.

Mr. REGULA. Could a school that had interactive TV, and last week we had the head of the Boundary Waters Canoe Area testify here, use that facility as an education tool?

Mr. O'CONNOR. They could certainly access the telescopes, yes.

Mr. REGULA. Very interesting.

Mr. O'CONNOR. And then, of course, they do have an educational office that has developed both video and other kinds of material that are accessible to school districts that would want them.

Mr. REGULA. I would imagine there's going to be an explosion of involvement of schools at all levels with your resources.

Secretary HEYMAN. Absolutely.

Mr. REGULA. Probably to the point that you will get crowded for personnel to handle your end of it.

Secretary HEYMAN. That is going to be a challenge, clearly.

Mr. REGULA. What you may want to do at some point is publish a schedule, that you will have, for example, a lecture on gems, which we did out in the 16th district a year or so ago, and then send this out to the schools. I assume that many schools could participate at the same time with a lecture at your end, is that correct?

Secretary HEYMAN. Oh, yes. That is happening in some ways presently. I think the biggest challenge is really being interactive in those circumstances because if you get beyond a couple of classrooms it becomes very difficult to handle questions and then discussion.

Mr. REGULA. I can understand that.

Secretary HEYMAN. But receiving over the Net is quite feasible.

Mr. REGULA. You could offer it as a lecture series and not try to do it two-way.

Secretary HEYMAN. And you can repeat it. Once you have done it once, you have memorialized it.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY BASIC RESEARCH

One of the things that I wanted to say just to add here, and I will do it fast, is a lot of what goes on at the Smithsonian, as with Astrophysical Observatory, in addition to what we have just been talking about, is very basic kind of research. It is what is the Universe, and what is it made up of, and all of the rest. It is very exciting. Just looking at the newspaper daily in terms of the science sections, people in general seem to be exceedingly interested. And SAO was really at the forefront of all of this. But out of this comes things that you would never have thought. One is a low-field magnetic resonance instrument which they developed because they were doing it for some other reason. But they have developed a device whereby you can really look into spaces in the human body through MRI—lungs, sinuses, and the like—which previously you couldn't do.

Mr. REGULA. Are you saying the MRI is an outgrowth of the work you do?

Secretary HEYMAN. No. One of the new applications of MRI is an outgrowth of what was space research. So it is so serendipitous. You are doing kind of basic research, you are building systems and equipment in order to do something up there in space and all of a sudden you find an application for it which is exceedingly useful. It is not logical in the sense of a progression from here to here. It really is serendipitous and it happens all the time.

Mr. REGULA. That's interesting. I think in many ways a lot of what you do is a well-kept secret in a sense. People think of the Smithsonian in terms of the public buildings here in the city, whereas the outreach is enormous and anyone that gets the benefit of this MRI application will never know they can thank your researchers in large part.

REPAIR AND RESTORATION BACKLOG

Backlog. As you know, this has been one of my great concerns, and you have addressed it. I am glad you put the Zoo in as part of the total request. It gives it more reality, but \$60 million a year. You have asked for \$47.9 million. Do you see you are progressively getting to the \$60 million?

Secretary HEYMAN. My conversations with the Office of Management and Budget would indicate that as we finish the Museum of the American Indian on the Mall, they will be very open to adding that quotient to R&R and get us up to \$60 million. So I am very hopeful that next year in the President's budget we will be able to commit at a figure of that sort.

Mr. REGULA. So far we have appropriated \$145 million, you mentioned \$250 million. Would you think that we could get completed in less than five years under that kind of a schedule?

Ms. NEWMAN. Excuse me. Mr. Chairman, we won't be able to complete it because once we go through the cycle we will start back through the cycle—

Mr. REGULA. Sort of like painting the Brooklyn Bridge.

Ms. NEWMAN. Absolutely. And you look at the age of the systems, by the time we get around through the Castle and the Arts and Industries Building, it will be time to go back.

Mr. REGULA. I understand.

Ms. NEWMAN. Natural History, we are always going to be working in that building.

Mr. REGULA. But the beauty of that is that once you get on cycle you won't have the backlog building up. You will be staying current as you go.

Ms. NEWMAN. We won't have the backlog, that is right. But we do believe we need \$60 million in order to keep the cycle.

Mr. REGULA. Right.

We will have to suspend again. We have a vote on final passage and three five-minute votes, so it is probably going to be about half an hour before we resume the hearing. I could put the rest of my questions in the record but some of the others may want to come back and ask some, so if you would be kind enough to wait.

Secretary HEYMAN. Fine, sir. We will be here. Vote well and good. [Laughter.]

[Recess.]

Mr. REGULA. The subcommittee will reconvene.

Mr. Dicks?

Mr. DICKS. Thank you, Mr. Chairman.

Mr. Secretary, we want on our side to also congratulate you for the great service that you have rendered to the Smithsonian. You have done an outstanding job. We appreciate your testimony here today and the really good work that is being done at the Smithsonian.

Secretary HEYMAN. Thank you, Mr. Dicks.

PATENT OFFICE BUILDING

Mr. DICKS. Let me ask you just a couple of questions. One is about the severe deterioration of the old Patent Office Building at 8th and G Streets which houses the National Museum of American

Art and the National Portrait Gallery. As I understand it, we are going to have some significant funding over the next few years to remodel that building. Can you kind of give us an update on that?

Secretary HEYMAN. Well, largely speaking, we have just got to solve some real problems like the roof leaking and a variety of kinds of infrastructure problems of that sort. In addition to that, we want to do some modifications internally in the building. Our plan is to try to convert about 60,000 to 70,000 square feet in that building from office space and other kinds of like uses into public space so that we can enlarge the exhibition space, both because we have collections that really ought to see more the light of day than they can in that building and also because attendance is on the rise, which is the reason that we have been seeking to get an additional building somewhere in that vicinity so that we can move some of the staff permanently out of that building to another building.

The Patent Office Building is what, Connie, the fifth oldest building in the District?

Ms. NEWMAN. Yes. Built in 1836 and the last restoration was in 1964.

Secretary HEYMAN. So it is understandably due for the kind of work that we want to do on it.

Mr. DICKS. Information obtained by the committee indicates one architectural firm estimated the cost to rehabilitate the old Patent Office Building as \$63 million and that is before including funds for design and construction contingencies and inflation. Their total estimate was \$97 million. How did the \$97 million estimate change to \$60 million?

Ms. NEWMAN. What happens often is that the design firms come in with designs that give you the best of everything, that give you the most expensive materials and the most expensive design for the building. And we went back and raised questions saying that although that would be wonderful, we really can't afford that. And in order to get the work done in the other buildings, we only had \$60 million. And it is possible to design it below the \$90 if you use different kinds of materials and if you don't make all of the changes in the building internally and with the facade.

Mr. DICKS. So, basically, we are not going to have the same quality as was—

Ms. NEWMAN. Well, it is not so much the quality but it is whether—and I will use an expression that I have used—it is whether you goldplate it. It doesn't mean that it won't pass the standards, it doesn't mean that it won't meet our needs, but it may mean that we won't have the most expensive model and use the most expensive materials.

Mr. DICKS. Who at the Smithsonian makes these judgements? Do you have an architectural staff?

Ms. NEWMAN. We have a large facility staff but we also go outside to have outside reviews.

Mr. DICKS. Was there an outside review done on this?

Ms. NEWMAN. Yes. There are many checks and balances. I can tell you that it was the firm Hartman-Cox on the Patent Office Building.

Mr. DICKS. They did the outside review?

Ms. NEWMAN. They did the outside review.

Mr. DICKS. They are an architectural firm?

Ms. NEWMAN. Right. But we can give you more information.

Mr. DICKS. That's all right. I was just trying to get a sense of it.

Secretary HEYMAN. I would just intersperse one comment. The original estimates of this are really based upon consultation with basically the users and the users are going absolutely top class in relationship to what they would like. And our function really is to bring that down into a reality, and that is really what has been occurring in terms of the Patent Office Building.

Mr. DICKS. The \$60 million is over four years, is that correct?

Ms. NEWMAN. That's right.

NATIONAL MUSEUM OF THE AMERICAN INDIAN—DESIGN CONTRACT

Mr. DICKS. Now the \$19 million requested in the construction appropriation account for the fiscal year 2000 completes the Federal share of the National Museum of the American Indian. Last year was a turbulent one for this project and resulted in the Smithsonian firing the architectural firm responsible for the award-winning design of the museum. As you indicate in your justifications, page 140, the Smithsonian is directing a new design team and hopes to keep the project on schedule for site preparation this year, actual construction next year, and completion in 2002.

Please give us an update on the situation addressing the following issues: the status of the relationship including any legal action with the previous architectural firm, I think it is GBQC, and the lead designer on the project, Douglas Cardinal.

Ms. NEWMAN. Right now we are attempting to settle the case between the Smithsonian Institution and GBQC. But this has not at all stopped the work on the design of the project. We took many of the architects and engineers who worked on the design initially and brought them into the project. Because the design has been completed and reviewed and approved, what we needed are the construction documents and we have brought in, under the leadership of our group, people who already understood the design of Cardinal and were able to help bring us to the next step.

You should understand that we are using his design. That is the design that was approved and we are not altering that. We are just getting the details that are necessary for the construction.

Mr. DICKS. Are you acting now as the prime contractor?

Ms. NEWMAN. We are acting as the prime contractor. We have others that have come in to help us with this, but the leadership of the project is in the Smithsonian.

Mr. DICKS. In an article appearing last year in the *Washington Post*, architecture critic Benjamin Forgey wrote about the collapse of the architectural contract for the National Museum of the American Indian. Here is what he said, and I would like you to respond to his observations. "The most troubling parts of the Smithsonian statement are not the listing of the design team's contractual failures. These issues, if necessary, can be settled in court. The real problem arises from the Smithsonian's insistence that the creative phase of the design process for the Mall building is finished. All that remains," the statement went on to say, "is the completion of

technical construction and engineering drawings. There is a pertinent example close at hand. Directly across the Mall stands the I.M. Pei National Gallery of Art East Building. Would this unusual building be as excellent as it is inside and outside if the Gallery had dismissed Pei and team before ground was even broken? The only answer is, no. Many key aesthetic decisions on the East Building were made after construction began. This is the way of many significant buildings designed by architects with strong personal visions."

Ms. NEWMAN. We also have examples of major buildings in this Nation where there was a different group that took the design of the architect to the next phase. That was not our preference but we feel very comfortable that this will result in an extraordinary building, particularly because many of the people in the original team are still offering their expertise to this project.

Mr. DICKS. So you are not worried about this?

Ms. NEWMAN. We are not worried about this.

Mr. DICKS. We are not going to wind up after spending all this money with a second-class building?

Ms. NEWMAN. We are not worried about this.

Secretary HEYMAN. You are going to have a really first-class building. We are very lucky that amongst those who are now supporting our leadership on this project are some extraordinarily good architects. And as I have been observing in any event, as they have been coming in with modifications that are necessary in order to get it built, they are really sensitively designed and they are really following the basic conceptions of Douglas Cardinal which had been applauded, as Mr. Forgey indicated.

I really am quite confident of the fact that this is just going to be a grand building.

Mr. DICKS. Thank you, Mr. Chairman.

SPOKANE SCHOLARS

Mr. REGULA. Mr. Nethercutt?

Mr. NETHERCUTT. Thank you, Mr. Chairman.

Welcome to you all. It is nice to have you here again. Mr. Heyman, I understand you are headed out to Eastern Washington in April, I believe.

Secretary HEYMAN. Looking forward to that.

Mr. NETHERCUTT. To the Spokane Scholars organization. It is a great group and they have had some very distinguished and prominent people, and I am delighted you are going to be able to join that list.

Secretary HEYMAN. I am pleased that you recommended me to them.

Mr. NETHERCUTT. I recommended you very highly. Dr. Eric Johnson is a good friend and is very involved in that and there is some great community support for Spokane Scholars. It is a program that rewards excellence in high school academics and these young students who get scholarships to go all over the country.

Secretary HEYMAN. Well I really look forward to it.

NATIONAL MUSEUM OF THE AMERICAN INDIAN—DESIGN CONTRACT

Mr. NETHERCUTT. I just want to follow up on the National Museum of the American Indian line of questioning. I asked about this last year and got an update from you relative to the status of the law suit and the appeal of the architectural personnel who were working on it. Is there a lawsuit pending right now or has there been a resolution of the disagreement between the architectural design firm and the Smithsonian? What is the status?

Secretary HEYMAN. The status is that GBQC brought a lawsuit against us. They made a big claim against the Smithsonian for breach of contract. And in terms of the procedural position of that lawsuit, it is not appropriate at this time for us to assert our counterclaim. Following substantial discovery by GBQC, the case was stayed to permit settlement negotiations. Should these discussions fail to resolve our claims, we will then prepare to assert a formal counterclaim.

This is in the Court of Federal Claims here. It is pretty clear, at least to our attorneys, that the judge doesn't have very much confidence in the validity of that lawsuit. We are now in some settlement conversations. But we are continuing to demand that we receive a payment for some of the losses that have occurred because of the delay, that we owe them nothing, and that clearly in this kind of a lawsuit one cannot, given the applicable procedural law, properly ask for reinstatement; all one can seek are damages.

There was a settlement conference I think about a week ago. It went on for four hours. Now both sides are contemplating where they should go from here. I am really confident, and here I am using a little of my own field as a lawyer, I am pretty confident that surely we are not going to owe anybody any money and that we have a really strong claim for some damages for breach by the other side.

Mr. NETHERCUTT. Good. I appreciate the update. I know when you are in the middle of settlement it is difficult to be too specific, and I appreciate that.

What, if any, costs will be uncompensated for, assuming there is a settlement, and you are satisfied with that settlement? Has this dispute caused some delay in construction which has translated into cost to the Smithsonian or delays in time?

Secretary HEYMAN. Clearly, we are going to have some added costs and it is not going to be \$10,000; it is going to be something more substantial than that. We are not seeking any additional Federal money to bring this to closure. Whatever that cost, it is going to have to be borne by our money-raising efforts or the efforts of the National Museum of the American Indian to raise private funds from both foundations and individuals. So we won't be back. But it is really sad and I felt badly, and if I felt badly, the Director of the National Museum, Rick West, felt really unhappy about the fact that the relationships between those architects fell apart and we simply couldn't get any product out and that we had to take the step that we did and sever those relationships with them.

But as I was saying to Mr. Dicks, I am really quite confident this is going to be a superb building. I am unhappy that we are going

to have to dip into some trust funds in order to accomplish it, but we will do it.

NATIONAL MUSEUM OF THE AMERICAN INDIAN—FUNDING

Mr. NETHERCUTT. I understand. You have requested \$5 million and 11 staff positions to fund three activities in association with the American Indian Museum: (1) the operational support at the Cultural Resources Center at Suitland, (2) the move of objects from New York to Suitland, and (3) the exhibition development associated with opening the Mall museum. I am wondering how much of the \$5 million is dedicated to each of these three activities, if you have that broken down.

Secretary HEYMAN. Well, it is \$2 million-plus for the exhibition. The balance goes to CRC. I had it in my head at one point. You might have that at hand.

Ms. NEWMAN. Here it is.

Secretary HEYMAN. The move that we have with respect to this request is \$1.1 million. That is moving materials from New York to Suitland. The balance for the Cultural Resources Center is about \$1.060 million, which are for positions in archives and research and curatorial and library resource centers and some technology in the Cultural Resource Center. Now that it is up and it is ready to function and we are doing things within it, we have got to build some additional staff.

As far as the Mall museum is concerned, essentially we are asking for \$2.3 million towards the exhibitions that will be in that museum when it opens. It seems strange but you really have to start to plan for exhibitions of this nature, of permanent exhibitions, three to four years in advance and you have to start bringing in materials, arraying them, and doing all the rest. This is, undoubtedly, no-year money.

Ms. NEWMAN. Right.

Secretary HEYMAN. So this is money that we can expend over that period of time before the opening of the museum. And then there is a little bit extra in there. There are five positions in there with respect to museum operations of both the Mall museum and I presume the branch which has been the sole museum up in New York until this occurs. So five positions are for community services and publications.

REPAIR AND RESTORATION AT THE NATIONAL ZOOLOGICAL PARK

Mr. NETHERCUTT. I have another question, Mr. Chairman, but if you prefer I wait—

Mr. REGULA. Go ahead.

Mr. NETHERCUTT. Okay. Quickly. With regard to the National Zoo and the new buildings such as the Amazonian Gallery, I am wondering what provisions have been made for the renovation of existing exhibits, the dilapidated condition of some of the exhibits as opposed to the new ones. How much money are you putting toward renovation and construction relative to those?

Ms. NEWMAN. All of it. We can give the details. For the Zoo, in this request there is \$6 million for repair and restoration. That is for roads, for utilities to address fire codes, and to start bringing the buildings up because there has been deferred maintenance.

Mr. NETHERCUTT. And you are satisfied that is adequate to meet the needs?

Ms. NEWMAN. We are going to try to bring the Zoo level up to \$10 million a year, and then that would get the Zoo in the same status as the rest of the Institution, that we would cycle back around to keep everything as it should be.

Mr. NETHERCUTT. Including security systems, I take it?

Ms. NEWMAN. Yes. Yes, the security systems. The wiring and all is within this amount but the CCTVs and all are separate and would not come under this category.

Mr. NETHERCUTT. Thank you very much.

Mr. REGULA. At our request, they have packaged the Zoo repair and restoration with all the rest so it will be on track.

Mr. Hinchey?

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

Mr. HINCHEY. Mr. Chairman, thank you very much.

Thank you, ladies and gentlemen. It is a pleasure to have you here and to be here with you. The Smithsonian, housing as it does some of America's great treasures, is a treasure itself. I congratulate all of you who are responsible for it for the very good work that you do there on behalf of the American people. I know that it is a place that is treasured by Americans all across the country and people want very much to come and to visit it. I understand that in order to meet that objective on the part of many Americans that are unable to come to Washington, you are planning some traveling exhibits. Can you tell us a little bit about that.

Secretary HEYMAN. Yes. We are doing three things to get out of Washington, basically. One are the traveling exhibitions that are mainly done by the Smithsonian Institution Traveling Exhibition Service. We do a whole bunch of them. We do about 150 presentations a year and that includes about 70 different shows, some are shown in multiples, during the year. Those are really usually scaled down versions of exhibitions that are at the Smithsonian; sometimes they are completely different.

In addition to that, there are some of the museums that travel their own shows. As an example, when we do the major restoration and renovation of the Patent Office Building, both the National Portrait Gallery, which is located there, and the American Art Museum are traveling six to eight big shows around the country during the period of time that those museums will be closed. Consequently, some significant portions of those collections will be appearing in other museums around the country during that period of time. That's one.

AFFILIATIONS PROGRAM

The second is that there was instituted by the Regents in 1996 a program of affiliations in which we are entering into agreements, and the momentum now is really on the rise, with museums around the country and some new museums that are coming on line to make long-term loans of Smithsonian artifacts and objects which will be housed in those museums. That will increase public access to our collections around the country and will be of real aid to those museums that are seeking affiliation with us.

We have put out the word. We receive propositions from museums daily. We are actively involved in 23 negotiations now, 5 have come to conclusion. There have been over 150 inquiries with respect to affiliation. So that is moving nicely.

INTERNET ACCESS

And then the third is the burgeoning presence on the Internet. We must have 50 hours now on the Internet. I was saying before that we are averaging well over 30 million hits a month. We are doing a lot of educational programs on it. We have a lot of our exhibitions that are on the Internet now. We have an increasing ability for people to access particular objects and classes of objects. And it is a primary vehicle for us delivering curriculum for K through 12 around the country.

So the Smithsonian today, in relationship to ten years ago let's say, is way around the country as well as solely being in Washington as a place that people visit on their pilgrimages to the District.

Mr. REGULA. You have a folder there that maybe you have seen that addresses about everything.

Mr. HINCHEY. Yes, I have seen it, Mr. Chairman.

Well I congratulate you on that effort. I think, obviously as you do because of your obvious enthusiasm for it, that we all realize how important it is to try to get all of this out to as many people as possible. An awful lot of people would like to come to Washington, particularly young people, but who aren't able to. Your efforts will bring it to them, and I think all of us very much appreciate that.

Secretary HEYMAN. Thank you, sir.

REPAIR AND RESTORATION BACKLOG

Mr. HINCHEY. I would like to ask you about the backlog on maintenance. I know that several years ago you identified for the committee approximately \$450 million in maintenance backlog plus an additional sum of money each year. Since then the committee I understand has provided \$145 million of that. I am wondering where we are in terms of maintenance, of repair and upkeep of buildings. I know that some of the galleries have been closed perhaps because of maintenance problems. If you would talk about that a little bit.

Secretary HEYMAN. We haven't closed galleries because of maintenance problems. We have closed galleries because we are doing maintenance. For instance, in the Air and Space Museum we are replacing at the moment all of that glass that surrounds that museum. And as the people who are doing the work progress around the building, we have got to close whatever the gallery is that's adjacent to that. But we haven't been forced to close galleries because of maintenance problems except very rarely and then for just a day or so while we are either mopping up the water or stopping it from coming in through the roof.

What we have done is we came to this committee a number of years ago with an analysis of if we got X amount of money a year, we can take care of the place—all of the place on an ongoing basis—so that as things deteriorate we will have the money to make sure that the deterioration doesn't go too far. We had sug-

gested \$50 million a year was necessary for the Smithsonian and \$10 million was necessary for the Zoo. Now they are together and it is \$60 million. The Chairman has been a wonderful stimulant to trying to get our R&R budget up to the point where we are self-sufficient in the sense of being able to address on an annual basis our R&R needs. We are getting there now. We really are.

The President's budget has \$47.9 million in it for that purpose. And I was saying before to the Chairman, the Office of Management and Budget looks in a friendly way to trying to bring that up to \$60 million next year because we will not be involved with any major construction projects at that time and so the capital funds that have characteristically come here can all go into R&R. I would really welcome being able to get on that sustaining basis.

Mr. REGULA. We're going to help them.

Mr. HINCHEY. Yes. Could I ask one more question, Mr. Chairman?

Mr. REGULA. Okay. Please be brief.

SMITHSONIAN MUSEUMS IN NEW YORK

Mr. HINCHEY. Sure. In New York we are very fortunate in that we have Cooper-Hewitt and the Museum of the American Indian. I wonder if you could just tell us briefly where we are on those two museums and what you plan for them.

Secretary HEYMAN. Well, Cooper-Hewitt went through a very major renovation. We put in \$13 million of Federal funds that had really been dedicated over time for that purpose, and, with the knowledge of the committee, of course, we got the board of the Cooper-Hewitt Museum, which had never really been asked to raise substantial amounts, to match that with \$7 million. So we ended up with \$20 million and we have renovated that whole place. It is in wonderful shape now. Some galleries were added, bridges between the buildings were added. It is a place that is peculiarly wonderful in terms of access by people in wheelchairs.

In any event, it is really fine and it is back in business. The board raised over \$1 million last year for operating expenses. That is a museum that will always need to have significant operations and participation by its board.

It is getting absolutely grand reviews in the *New York Times* I must say. It has turned from a decorative arts museum into a museum of design. So the architecture community, the interior design community, et cetera, are really very wedded to it. And now we have got to start to build up attendance, which I think is really quite possible as we start to become more sophisticated in marketing in that very tough market in New York.

Down at the Battery with the branch at the revived old Customs House is the National Museum of the American Indian, that has absolutely surprised me in terms of the extraordinary visitorship. We are getting around 500,000 to 600,000 people in a museum that isn't near other museums. You would expect that that would be the hardest place to really draw large numbers of people. But we are getting them. Maybe we are getting a lot of them during lunch and after lunch who are working in the financial district, I don't know. But we are getting real visitorship at that museum, which is one

of the reasons that I am so optimistic with respect to what the popularity of the Mall museum will be when it is finally erected.

Mr. HINCHEY. Thank you very much.

Thank you, Mr. Chairman.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

Mr. REGULA. Mr. Cramer?

Mr. CRAMER. Thank you, Mr. Chairman.

Welcome to the committee. I had to leave earlier, and I apologize for that, but I am interested in hearing about the SITES program. You have probably talked about the SITES program several times this morning, but I am very impressed with the program. I have the summary publication here. The rural initiative has existed for five years. Could you tell me how many travelling exhibitions are you able to support each year? Briefly, how do you determine what to take to the road? How proactive are you with that program? Do you identify within an area a particular exhibit or program that you take in there? Is there give and take between a local community with what you do?

Secretary HEYMAN. First of all, we have an imaginative staff and a wonderful director of the SITES activity, Anna Cohn. What we do is we design a whole bunch of shows and we publicize them to those in the market for those kind of shows. We might have 15 different new ones at any month or every other month and we get the word around. Then people pick and choose between those shows.

We have had really wonderful luck with the "Museums on Main Street" activity. I don't know the numbers, but I do know the success rate of some of them. "Barn Again," which we talked about before, has just done exceedingly well. The poster show from the Second World War has been the basis of a number of rural communities organizing their own activities around the core of what we have done. I see that in terms of this rural initiatives program in terms of participating communities, I have got four from Alabama—and the populations are really interesting when you look at this—Butler, with 1,872 people in it; Alberta, with 458; Scottsboro, with 13,786, at least the figures I have here.

Mr. CRAMER. That's right. [Laughter.]

Secretary HEYMAN. But what happens with each of these is they become a locus for people from around not solely in the community itself. They also represent a kind of partnership between the Smithsonian which is providing funds, the local community which is providing some funds, and then usually whatever the humanities council is at the State level is providing some funds.

Mr. CRAMER. So you offer a menu of choices that allow the communities to weigh into that?

Secretary HEYMAN. We offer a menu, yes. This is this year's menu.

Mr. CRAMER. That's the menu for this year? All right. You have partnerships or you are seeking partnerships and cooperative ventures with private sector. How is that going?

Secretary HEYMAN. I think it is going pretty well. The reason I am hesitating is because there are so many different ways that this can occur.

Mr. CRAMER. Well, for example, I have noticed that in fiscal year 2001 SITES and the Lila Wallace Reader's Digest Fund will introduce an exhibition about America's lost jazz shrines. Is that an example of a partnership with the private sector as well?

Secretary HEYMAN. Yes, of the nonprofit part of the private sector. But we are also doing alliances in SITES with the for-profit sector. I have one here that I know, which is an alliance with Silver Dollar City, which is a theme park in Branson, Missouri, and that is a for-profit operation but it is a place in which we can get a lot of people to see our shows and we can make a little money which then can get plowed back into our share of the costs of other presentations. There are a few others with respect to SITES, for instance, where there are exploratory conversations going on presently along the same line.

Mr. CRAMER. I would like to, not now but at some point, maybe we could visit with appropriate staff over this program and discuss some ideas that I have.

Secretary HEYMAN. We would be delighted. We would be delighted.

Mr. CRAMER. Thank you.

Thank you, Mr. Chairman.

BUSINESS VENTURES

Mr. REGULA. Thank you. Just one last question. You were discussing new strategies for your business ventures, magazines, museum shops. How are they performing and do you think they are cost-effective?

Secretary HEYMAN. Well they are certainly cost-effective in that they are producing about \$25 million a year in unrestricted trust funds.

Mr. REGULA. Are you talking about net profits?

Secretary HEYMAN. Yes, net. That is the net profits from them. The biggest contributor to that is the *Smithsonian Magazine* which has over 2 million subscribers.

Mr. REGULA. You are talking in terms of subscriptions, not any sales, but your biggest contributor to your bottom line is the *Magazine*.

Secretary HEYMAN. To my bottom line is the *Smithsonian Magazine*. That must gross about \$65 million a year and net about \$12 million. So that's not bad for that.

Mr. REGULA. Very well done.

Secretary HEYMAN. And then we have shops and we have the catalogue sales and the like.

Mr. REGULA. Do you get any complaint that you are invading the private sector with these?

Ms. NEWMAN. Not really.

Secretary HEYMAN. I have not heard one since I have been Secretary.

Mr. REGULA. You have a somewhat different line of merchandise.

Secretary HEYMAN. Yes. Everything is related to the collections of the Smithsonian, at least all of the retail sales, shops and catalogue.

SECRETARY HEYMAN'S LEGACY

Mr. REGULA. Thank you very much. I want you to know that we appreciate your being here, and we are sorry this will be your last hearing.

Secretary HEYMAN. I am a little sorry about that too, sir. But thank you very much.

Mr. REGULA. I would be curious, if somebody said to you what do you consider your greatest single legacy is, Mr. Secretary, do you have any thoughts about that?

Secretary HEYMAN. Well, I have thought about that. I think it really is in the outreach programs that I have talked about.

Mr. REGULA. Certainly, that will touch more lives.

Secretary HEYMAN. I think so and I think that is a real change for the Smithsonian. I think that as we look back sometime in the future with respect to the nature of the Smithsonian and how we feel about it, I think that will probably be the major thing that has come out of my term.

Mr. REGULA. Mr. Hinchey would agree with that.

Mr. HINCHEY. Indeed, I would, Mr. Chairman.

Mr. REGULA. We on the committee have very much appreciated our relationship with you and your staff. As I said, you leave a great legacy and a lot of quality people will be here to make it work.

Secretary HEYMAN. I thank you very much.

Mr. REGULA. Come back and visit with us.

Secretary HEYMAN. Oh, I shall. I will be here until December and that's a long time in Washington. [Laughter.]

Mr. REGULA. Thank you all very much.

The hearing is adjourned.

[Additional questions for the record follow.]

ADDITIONAL COMMITTEE QUESTIONS

OPERATIONAL AND PROGRAM INCREASES

Question 1: Your fiscal year 2000 budget contains a \$40 million increase over the enacted level. If funds are not available to fully fund your request, what are your three highest priorities?

Answer: Our highest priority continues to be funding the mandatory costs increases in the Salaries & Expenses (S&E) account. The requested increases for mandatory costs amount to \$19.4 million or 58 percent of the total S&E increase. Mandatory costs increases result from annual legislated increases in salaries and related benefits, utilities, rent, and the impact of implementing requirements of the Panama Canal Treaty in January 2000. The Smithsonian must have these funds to support existing staff and infrastructure in order to fulfill our mission.

In addition to the mandatory increases, we are asking for \$14 million for program increases in the S&E account. Of this amount, \$5 million is needed for our second priority, establishing Washington DC area operations for the National Museum of the American Indian. The requested amount provides funding and staff for the Cultural Resources Center (CRC) in Suitland, Maryland, moving staff and collections from New York City to the CRC, and developing opening exhibitions for the Mall Museum. The requested resources will help ensure that the NMAI program will remain on schedule.

An integral part of the second priority is the Construction request for the last increment of phased funding to complete construction of the Mall Museum building. The Museum in its three parts has now been 11 years in the making. Availability of the new funding will ensure the unity of the Museum in all of those parts and its opening fully to the public in 2002 as planned.

Our third priority continues to be the Repair, Restoration and Alteration of Facilities account. The FY 2000 Request provides for systematic programs for ensuring acceptable performance of facilities including the rehabilitation of the American Art and Portrait Gallery (Patent Office Building), the fifth oldest building in Washington DC. Bringing our highly visited facilities to more stable environmental conditions and keeping them there will have positive effects on long-term maintenance costs and public accessibility.

Question 2: The operational increase is \$29 million, of which \$19.4 million is for fixed costs and \$14 million is for program increases. Please describe the three highest priorities for program increases and provide the Committee with a more detailed analysis of how those funds will be spent?

Answer: We have already discussed the importance of the increases for the National Museum of the American Indian in question #1. The following are our highest priorities for remaining program increases. These increases are increments towards initiatives begun in prior years. These priorities are: the increase for access to collections information (\$5 million), much of which will provide electronic capture, storage of, and access to collections and related data; preparation of objects for the move to the National Air and Space Museum Dulles Center (\$2 million); and the completion of modernization of the Institution-wide security system (\$2 million).

Collections Information Access (\$5 million) - This request will continue necessary incremental funding through 2003 to digitize several million images of objects in the SI collections, along with accompanying data. The requested amount will be used to support the following:

- Digitization and Image Management: including digital scanning, numbering system development, post processing, record-keeping, care and handling.
- Data Enrichment: including retrospective cataloguing, developing data content, organizing and presenting content in meaningful ways, enhancing textual database retrieval, creating proper search engines.
- Networks: including establishing and upgrading network capabilities.
- Database Development: including enhancing storage capability and photography.

The Smithsonian is aggressively seeking partnerships and cooperative ventures with the private sector and other cultural, scientific, and educational entities to supplement Federal resources.

National Air and Space Museum Dulles Center (\$2 million and 14 term positions) - The Institution's request for an increase of \$2 million and 14 term positions is needed in FY 2000 to preserve and restore airplanes and engines planned for display at Dulles Center. This estimated funding requirement includes labor (\$850,000), material and transportation for cleaning, restoration, preservation or conservation (\$1,150,000) prior to the scheduled move to Dulles Center. The requested funding will allow NASM to:

- Inspect and inventory thousands of disassembled and crated artifacts.
- Restore, preserve, and/or conserve those artifacts requiring treatment.
- Clean all artifacts before installation at Dulles.

Institution-wide Security System (\$2 million) - The request for \$2 million is the third increment of a \$12 million project first funded in FY 1999. The request for FY 2000 will move the project closer to the target of design completion, system construction and installation, and total Y2K compliance for Mall facilities. The following table summarizes total funding requirements for the security system modernization.

Security System Modernization		
FY 1999	\$2.0 million	Funded in Repair and Restoration Account to complete the modernization of the NMNH security system
	\$4.7 million	Funded in Salaries & Expenses (Y2K) Emergency Supplemental Appropriation for: Museum Support Center, the Quadrangle, National Air and Space Museum and National Museum of American History
FY 2000	\$2.0 million	To complete the installations begun in 1999
Subtotal	\$8.7 million	
FY 2001 and out years	\$3.3 million	To provide optional enhancements
Total	\$12.0 million	SI Security System Modernization

Question 3: There is a significant increase of \$3 million for water and sewer costs levied by the District of Columbia - a 42 percent rate increase. When was the last increase and what is their explanation for this enormous rate hike?

Answer: The District of Columbia has not increased water and sewer fees since the 1980s, when four increases brought customer rates up 152 percent. A fifth increase, scheduled to be 10 percent, was killed by the DC Council in 1989. The DC Water and Sewer Authority proposed a 42 percent increase in 1996 that would pay for urgently needed repairs and improvements to comply with two Federal consent orders. The rate increase is the first in a decade and took effect April 1, 1998, when the Authority reaffirmed it after listening to public comment. Actual billing lags behind the year in which the rate went into effect, and therefore is reflected in the Institution's FY 2000 request.

Question 4: Also included in the fixed cost budget is a \$2.7 million increase for rental space. Your budget explains that this is mostly due to dislocation of staff and collections as major buildings are undergoing major capital renewal projects.

What is the process you use to determine the availability of space, location and cost?

Answer: The Institution has a comprehensive process for evaluation of requirements for new leased space. Once the need has been validated, and a determination is made that existing Smithsonian space is not available to accommodate the requirement, a general description of the space needed is developed. This description includes the type and amount of space, location and adjacency requirements, when and for how long the space is needed, and other logistical issues such as space configuration and move-in costs. A brief market survey is done to estimate the lease costs, and evaluate the availability of space in the targeted location. This is the information used in the budget formulation process.

Question 5: Is it reasonable to assume that you are paying premium rental prices because your use of the space is temporary?

Answer: The Institution has planned the renovation of several museum buildings sequentially, in order to be able to lease a single space to accommodate dislocated staff and collections. The Patent Office Building renovation will begin in 2000, the Arts and Industries Building in 2003, and the Smithsonian Castle around 2005. The Institution therefore expects to be able to take advantage of better lease terms usually available for leases over five years in duration.

Question 6: How much of the process and restrictions are due to the General Services Administration?

Answer: The Smithsonian is not required to lease from the General Services Administration.

Question 7: Please explain the exact circumstance surrounding the need for additional funds for rental needs at the Smithsonian Astrophysical Observatory (SAO) and the Submillimeter Array project in Hilo, Hawaii.

Answer: SAO had originally planned to meet the base facility requirements at comparatively low cost by occupying space in a building to be constructed by the General Services Administration (GSA) on University of Hawaii property in the Science Park at the base of Mauna Kea. As a condition of this partnership between the Federal government and the University of Hawaii, local Federal

agencies could occupy space in the building by paying operating costs only. This GSA project was canceled.

All antennas for the submillimeter array are first being constructed at the SAO facility in Haystack, MA. After successful testing in the fall of 1998, the first antenna was disassembled and shipped to Hawaii in January. The mount for the first antenna, shipped by sea, arrived in March at the island of Hawaii; the reflector for this antenna arrived by air and is now being reconstructed on the summit for placement on the mount. Having reached this stage of the project, the staff that will be involved in setting up the full SMA on Mauna Kea now needs to occupy a substantial amount of additional space in Hilo by the end of this fiscal year. The total additional space needed for staff and equipment is about 12,000 square feet.

Question 8: As part of the implementation of the 1977 Panama Canal Treaty, the Smithsonian's Tropical Research Institute is required to comply with the Panamanian labor laws. This action will cost \$919,000. Is this a one time cost?

Answer: The amount requested in FY 2000 represents 75 percent of the total required permanent base increase of \$1,226,000. Annualization of this request will be included in the FY 2001 budget.

NEW AIR AND SPACE MUSEUM AT DULLES INTERNATIONAL AIRPORT

Question 9: Your budget includes \$2 million for collections preparation for the new Dulles Center. When the Committee provided the planning and design money several years ago there was no mention of additional funds being needed to prepare the collection. Are the plans and designs completed?

Answer: The design of the National Air and Space Museum - Dulles Center is complete.

Question 10: The Committee recalls that the Smithsonian stated that the planning and design funds and operational needs once the center was completed was the federal commitment to the project. Why has the situation changed?

Answer: Prior presentations did not address costs associated with the preparation and move of the collections to the Dulles Center. The Center's operational needs, however, begin with this activity well before the building opens to the public in 2003. Such preparation gives us the opportunity to move forward more quickly to provide long-needed care for our valuable air and space artifacts.

Question 11: What is the estimated cost for preparing and moving the collection?

Answer: At this time the National Air and Space Museum is estimating the cost at approximately \$12.2 million to prepare, move and install the collections at the Dulles Center.

Question 12: The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1998 contained \$6 million for the National Air and Space Museum. Do you intend to use these funds for the Dulles project? If not, why?

Answer: The ISTEA funds of \$6.0 million over six years are to be divided equally between the National Museum of American History and the National Air and Space Museum. Approximately \$1.2 million of the \$3.0 million to support the National Air and Space Museum will be used to prepare artifacts for the Dulles Center. This includes 5 5-year temporary FTEs and associated material to support the work. The five FTEs were filled in January 1999, and the employees will continue to prepare artifacts for the Dulles Center.

Question 13: Do you intend to use those funds for new initiatives?

Answer: In addition to using the ISTEA funds at the National Air and Space Museum (NASM) to assist in preparing artifacts for the Dulles Center, these funds will be used to restore the Air Transportation hall. The Air Transportation hall has not been refurbished since NASM opened in July 1976.

Question 14: The Commonwealth of Virginia committed to provide \$6 million in appropriated funds and a \$3 million interest free loan. Has the Commonwealth made good on these pledges?

Answer: The Commonwealth of Virginia continues to support this project. To date, the Commonwealth has provided \$1 million in appropriated funds and a \$1 million interest-free loan. In January 1999 the Smithsonian Institution's Board of Regents authorized an additional \$2 million interest-free loan from the Commonwealth.

Question 15: It appears that both the Committee and the Commonwealth have provided or are in the process of making good on their pledge of support for this project. However, for the last several years the private fundraising efforts for the structure itself have been very slow in developing.

How much of the \$130 million has actually been raised to date?

Answer: As of February 16, 1999, the Capital Campaign has raised \$20.1 million in confirmed and unconfirmed pledges. This meets the schedule laid down in 1998 that the campaign would raise \$20 million by February 28, 1999; \$60 million by June 30, 2000; and the full \$130 million by December 2003.

Question 16: What is causing the delay?

Answer: Drawing on the expertise of other capital campaign programs, the Dulles Center's Capital Campaign spent the last eighteen months building the Campaign infrastructure, securing a national Campaign Chair and Honorary Campaign Chair, establishing a Dulles Center National Board, and building a fund raising staff and an all-important corps of volunteers. The capital campaign is not experiencing a delay in achieving its campaign goals. The campaign met its initial goal of \$20 million by February 28, 1999.

Question 17: Since the fundraising is falling behind schedule, why is it necessary to provide the \$2 million for collection preparation next year?

Answer: As stated in the answer to the previous question, the Capital Campaign is not experiencing a delay in achieving its campaign goals. We anticipate starting the construction of the building in January 2001 and completing construction in 24 months. The staff must be trained to prepare artifacts for the mid-2002 move to the Dulles Center. To be moved safely, the priceless, one-of-a-kind air and space artifacts of the collection require detailed technical work by skilled, competent individuals. The Smithsonian's request for \$2 million and 14 FTEs in FY 2000 is vital to the plans to have the new museum center at Dulles International Airport ready in 2003, the centenary year of powered flight.

Question 18: Do you still believe that you will open the facility to the public by 2003?

Answer: Yes, the building will open to the public in 2003. The centennial of powered flight will be celebrated on December 17, 2003, in the main hangar of the Dulles Center.

NATIONAL MUSEUM OF THE AMERICAN INDIAN CULTURAL RESOURCE CENTER

Question 19: The budget request includes a \$5 million increase for the new Cultural Resource Center in Suitland, Maryland, of which \$2,166,000 is associated with the collections move and \$2,834,000 is for exhibitions and operations of the new facility.

Please provide greater details on the expenditure of these funds than was provided in your justification table.

Answer: For Fiscal Year 2000, \$1.1 million is allocated for move activities; \$2.3 million for exhibits development; \$100,000 for staff and operations for the resource center at the Cultural Resource Center, (CRC) in Suitland, Md.; \$320,000 for preservation and cataloging contracts and \$42,000 for operations and acquisitions of library services; \$223,000 for staff and operations for archives; \$236,000 for staff and operations costs for curatorial activities; \$145,000 for technology upgrades and equipment; \$146,000 for additional staff and operational support in the area of community services and outreach; and \$388,000 for positions and programmatic activities in the publications area.

- **Move (\$1.1 million)** - These funds will be used to contract for the services of a fine arts mover to begin to relocate the collection. The work will move systematically from vault to vault to empty the facility in the Bronx and house the collection at the newly opened CRC. This effort will be in addition to the move activities begun in-house with funds in FY 1999. Following preparatory work and relocation of already-packed and easier-to-move collections in FY 1999, the FY 2000 increase will allow NMAI to accomplish up to 20 percent of the collections move. The goal for FY 2000 is to clear approximately 4 of the 17 vaults. These contain ethnographic collections from the northwest coast and Central and South America. Additionally, NMAI will move several thousand objects needed to prepare for the Mall Museum opening exhibitions, for ongoing repatriation reviews, and for loans and services to other museums. All collections will be digitally photographed during the move to aid inventory control and to enhance public access to NMAI's resources through on-site research, electronic media products, publications, and curriculum materials.

Schedule and resource estimates are based on requests for proposals from art movers and the experience of other institutions with complex collection moves. No other institution has moved so many items (1,000,000) so far (270 miles). However, NMAI expects to improve on the proposed five-year schedule as the full-scale contractor-supported move plan begins with the funds requested.

- **Exhibits (\$2.3 million)** - In order to open the Museum on the Mall in FY 2002, NMAI has begun plans for the development and installation of exhibits for its three galleries and other public spaces (totaling 50,000 square feet). The development of the content of the three inaugural exhibitions for the Mall Museum will be complete this year. In FY 2000, the exhibition design will be completed and production of various components will begin. Fabrication of the

exhibitions will continue through FY 2001 and installation will begin in early 2002. The three major exhibitions will reflect the wide diversity of Native American communities, their experiences, and their contemporary lives and activities.

All exhibitions will contain areas that can be easily changed to introduce new and updated topics and additional collections. There will be media components for exhibits including interactive modules and databases providing in-depth information. Spin-offs from these products will be used for educational outreach activities.

A Preparation Theater (Circles of Tradition) will offer a fully automated multimedia presentation to introduce visitors to the themes and messages of the Museum's three main exhibitions. There will also be Study Collections (Across the Generations) offering an opportunity for visitors to view the breadth and diversity of the Museum's collection.

- **Resource Center/visitor services (\$100,000)** - Resource Center staff will provide assistance to visiting scholars, researchers, and Native Americans needing access to information on the collection and information pertaining to Native cultures in this hemisphere. This funding will support two staff and their work. One position will be for a receptionist to greet the scholars, researchers and visiting tribal representatives who come to the facility for access to the collection. The receptionist will also handle telephone and written requests for information by conducting preliminary research and contacting appropriate curatorial staff to compile information in order to respond to requests. The second position will organize databases, files, publications, audio-visual and multi-media materials used by resource center visitors. Both positions will also work with their colleagues at the George Gustav Heye Center, (GGHC) in New York in order to develop new materials in support of the collection, developing formats for this material utilizing technology.
- **Library (\$362,000)** - With the anticipated acquisition of the Huntington Library collection of materials long associated with the artifact collection, NMAI anticipates expending \$320,000 on the creation of electronic records of the Huntington collection including its important rare book collection, and retrospective purchasing to fill gaps in the collection. The remainder will be spent for current library materials and other support activities. Although this collection is outstanding and uniquely tied to the Museum's artifact collection, no additional materials in the field of Native American cultures of this hemisphere have been added since George Gustav Heye ceased collecting.

Therefore, a primary goal will be to acquire materials to update this library collection.

- **Archives (\$223,000)** - Funds will be devoted to staff a new special collection unit comprising photo and paper archives and film and video collections, previously dispersed throughout the Museum and are among the first collections to be relocated to the new facility. The two new positions, an archivist and a database manager, will manage this function by addressing issues of access, inventory, protection, and organization. Catalog information for the 80,000 item photo archives and the several thousand item film and video collections will be upgraded and incorporated into the Smithsonian's collection and archives information systems for greater access. Staff will also develop finding aids, and provide ongoing services to researchers; and support for exhibitions, repatriation requests, and other projects drawing on these archival materials. The improvements in this area will directly impact NMAI's ability to expand outreach and provide greater assistance to users not on site.
- **Research and Curatorial (\$236,000)** - Two new curators will be hired to work directly with the collections and funds will be provided to support their activities. The staff will address increased documentation of the collection for the Web, curating the exhibits, and loan requests for artifacts. In collaboration with people from Native communities, these curators will assist in planning the Mall Museum exhibitions, including the development of story lines and selection of materials to express Native voices in the exhibits. They will also conduct research on object interpretation.
- **Technology (\$145,000)** - This sum is intended to provide technology support for staff and collections activities at the CRC, including improving the links between NMAI locations and providing support for collections databases. The request includes \$85,000 to contract services for database development, expanded digital video products and applications for exhibitions and outreach, and website design and maintenance; \$30,000 for additional server and backup hardware for expanding databases; and the remainder for enhanced telephone systems; and miscellaneous support for NMAI networks and applications at all four sites (New York's research branch in the Bronx and GGHC, and Washington area offices and CRC).
- **Community Services (\$146,000)** - With the opening of the CRC, NMAI can now further its mandate to serve Native American communities by linking its collections and resources in order to help revitalize and sustain cultural traditions. The work of the Community Services staff will also help NMAI increase public understanding of diverse Native American cultures through

collaborative projects that reach NMAI's many audiences. Activities include internships, training workshops, loans of collections, jointly developed public programs and projects made possible at CRC using radio, multimedia, and other technologies to document experience and traditions of the communities in danger of being lost as senior generations diminish. Relationships established with communities now will help NMAI use technology to link those communities with NMAI's exhibition and public program sites in New York and Washington. Funds will be used for a program manager, an audio-visual production technician, and for support.

- **Publications (\$388,000)** - The addition of three positions will support production of the wide range of written materials at the CRC as well as those planned for the Mall Museum. Among these are the development and publication of two books and inaugural events materials for the opening of the Museum, and the further development and expansion of websites and technological links to audiences beyond the east coast. The two books are: *Native Universe* a compendium cultural portrait of Native Americans' emerging history and identity featuring many leading Indian writers; *The Building Book*, a history of NMAI with an emphasis on architecture of the new buildings.

Question 20: Should the entire amount not be allotted due to allocation restrictions, please tell the committee what the priorities would be in as much detail as possible.

Answer: If approved funding levels are less than requested, NMAI must place the **first priority** on preparation and development of exhibitions. An amount of \$2.3 million will be devoted to this activity in order to have the lead time required to open the Mall Museum in 2002 with all exhibitions, galleries and public spaces programmed for visitation. This amount will provide needed support for the continuation of activities already underway and scheduled for completion by the opening date. This complex task has numerous phases involving development and construction. All of this must be accomplished within time frames, utilizing a number of contractors in sync with the construction of the building. NMAI must have the requested funds to maintain scheduled workflow.

The **second priority** would be the relocation of the collection from the facility in New York to the new, state-of-the-art building at Suitland. Any delays in this activity resulting from funding levels less than those requested to fulfill the planned five-year schedule will lead to additional costs. For instance, additional costs arise from staff traveling from the DC area to work on the collection remaining in New York as well as from the continued expense of maintaining the building in New York longer than absolutely necessary. There is increased

deterioration to the collection the longer it is kept in such an inadequate facility. NMAI's ability to meet the needs of tribes, scholars and researchers in providing access to this notable collection will also be hindered.

A **third priority** would be to maximize the library/archives activities by using the Library of Congress and Smithsonian Institution Libraries (SIL) cataloging systems to bring more information and materials online to support the exhibit program. As more information and public knowledge of the collections becomes available, this function will be essential to meet the public demand for access and information.

With less than requested funding, our **final priority** would be the services provided by the resource center/visitor services to our Native constituencies as well as to scholars and researchers who have anticipated the opening of the Cultural Resources Center. These services are a linchpin to the promised enhanced accessibility of collections and information.

Question 21: Is the Suitland facility still scheduled to open to the public next fall?

Answer: Yes. With the funding requested, the Cultural Resource Center in Suitland will become the centerpiece for preparing and staffing the exhibits for the Mall Museum, for developing Web products for outreach, providing curatorial support for upcoming and changing exhibits at the George Gustav Heye Center in New York, and for providing responsive action to repatriation requests and priority loan requests as collections can be relocated from New York.

NEW COLLECTIONS INFORMATION INITIATIVE AND TRAVELING EXHIBITS (SITES)

Question 22: Your budget contains a \$5 million increase for the Collections Information Access initiative. What specific progress has been made to date?

Answer: The Digital Library has gone through a successful first phase. At present, we are able to search through 25,000 records containing 10,000 images across most of the museums. The next phase of the operation (in three months) will have the rest of the museums and several hundred thousand images, and will be made available throughout the Smithsonian for testing.

The Digilab exhibit at the National Museum of American History is scheduled to open in April, 1999. It will be staffed by photographic professionals from the Smithsonian who will not only carry out their normal activities but will be on hand to demonstrate the latest in digital technology. The complete photographic

laboratory facility of the Smithsonian has shifted from the traditional "wet" processes to electronic or "dry" processes. This allows considerably faster turnaround with much higher quality control. Work will be done at this site on digitizing the collections and the staff will serve as a resource on digitization standards for the Institution.

Question 23: For the past several years, the Smithsonian justification has stated that it is aggressively seeking partnerships and cooperative ventures with the private sector. Specifically how much has been raised to date to match federal funds for this program?

Answer: To date the Smithsonian has received the following through its efforts to work jointly with the private sector:

Intel - \$100,000

IBM - \$75,000 (also approximately \$1 million for in-kind equipment and consulting support)

Hewlett Packard - \$100,000, plus equipment

Polaroid, Real 3D, Phase One - equipment valued at approximately \$500,000

Question 24: It appears each year that major increases are requested for the new Collections Information Initiative yet no increases are pursued for the very successful Smithsonian Traveling Exhibition program (SITES). Why is that?

Answer: The Institution has many wonderful programs which could justify increased support. However, with limited funding growth targets, we must prioritize our requests for increased Federal support. SITES exhibits are supported by rental fees, whereas implementation of integrated collections systems with the capability of public access to information and images is expensive, and private funds are not available to support the core elements. Information from legacy systems (including manual ones) must be converted, research information added to basic registrarial records, and images digitized and linked to the data.

Question 25: How many traveling exhibitions are you able to support each year?

Answer: SITES' federal appropriation and Smithsonian Trust fund allotment support payroll costs and a portion of the administrative expenses

required to take exhibitions on tour. Participation fees from the museums cover salaries for registration staff to oversee the program. The costs of producing and circulating the exhibits in SITES' program are funded by a combination of rental fees and the dollars raised from private sector sponsorships. To keep Smithsonian traveling exhibitions affordable not only to well-established museums, but also to the widest possible range of cultural institutions in grassroots America, SITES supports as many of its programs as possible through fund raising, rather than through high rental fee charges. Today, SITES secures between \$7 and \$10 million in private funds every year to ensure that more than 60 exhibitions will travel throughout the nation.

Question 26: How many requests do you receive from communities across the country?

Answer: SITES receives several hundred requests per year from museums, science centers, libraries, historical societies, community centers, municipal buildings, zoos, aquariums and schools located in cities and towns in all fifty states.

SECURITY SYSTEM

Question 27: The Committee discovered last year that there was a serious deficiency in the Smithsonian's security network and provided \$2 million to initiate the \$12 million replacement project. The Congress also provided several billion dollars to the Federal agencies for Y2K compliance. The Smithsonian received \$4.7 million just last month from the Office of Management and Budget.

Was the entire \$4.7 million applied toward the security replacement program? If not, how were the funds allocated?

Answer: Yes, all \$4.7 million is being applied to the program, to address Y2K issues.

Question 28: The fiscal year 2000 budget request includes another \$2 million for this project. Is the Smithsonian comfortable with this level of phasing for the security project?

Answer: Yes, the \$2 million will bring the total appropriated to \$8.7 million. These funds will ensure that the system is fully modernized at its current level of operation. The Institution is still considering the extent to which it is necessary to increase the level of security provided.

Question 29: Can the Smithsonian assure the Committee that there is adequate protection under the current system for the buildings and collections?

Answer: Yes. In addition to working diligently to install the new system, any security needs that arise while the system is being replaced are being addressed through a "work around plan" which includes the deployment of additional staff where necessary.

MAJOR REPAIR AND RESTORATION ACCOUNT

Question 30: The Smithsonian reported to the Committee in fiscal year 1996 that there was \$250 million in critical backlog maintenance projects and that an additional \$50 million per year for 10 years was needed to prevent closure of the museums and other facilities. Since that time the Administration has requested far less than that level every year.

In addition, the Committee discovered last year that the National Zoological Park, the Front Royal Research facility and the need to replace the entire security system for the museums was not included in those totals.

What is the additional amount needed to take care of the serious backlog at the Zoological Park in Rock Creek Park, the Conservation Research facility in Front Royal and the security system for the Institution?

Answer: The current backlog at the National Zoological Park's two sites is estimated at between \$40 and \$45 million. Initial estimates are based only on visible conditions. The longer it takes to repair the deficiencies, the greater the extent of repairs and associated collateral work. As the work is defined in detail, unforeseen or hidden conditions always drive the cost upward. In addition, the current backlog list does not cover failures that may arise in the next five years. For example, the bear and elephant exhibits are both due for major renovations in the next five years, and only the portion of costs for already failing equipment is included in the backlog.

The cost of the replacement security system for the Institution is not included in the backlog of maintenance projects, as the cost has been budgeted primarily in the Salaries and Expenses account. With the exception of the \$2 million appropriated in the Repair and Restoration of Buildings account in FY 1999, which will be used to begin replacement of the system in the Natural History and Quadrangle buildings, the R&R account will be used only to make architectural changes to buildings to accommodate the new system.

Question 31: How much of those totals includes cyclic maintenance versus major capital repair?

Answer: Most of the \$250 million maintenance backlog previously reported represents major capital renewal of the four buildings in the most deteriorated condition. These buildings include the National Museum of Natural History, the Patent Office Building, the Arts and Industries Building, and the Smithsonian Castle. Together these buildings account for more than \$200 million of the total. The remainder of the critical backlog, about \$50 million, includes a variety of requirements in the other Smithsonian buildings.

Question 32: Are these needs prioritized?

Answer: Yes, the Institution prioritizes the work identified through a very rigorous process. Life safety and emergency repair requirements, including animal welfare and containment problems, are scheduled for immediate correction. Remaining work is divided into general categories: building exteriors, internal systems and finishes, and other code compliance requirements. Within each category, requirements are ranked according to several criteria: whether the problem is an active failure (such as a roof leak), an imminent failure (such as a piece of equipment that requires frequent repair), a predicted failure (such as a known future replacement requirement), and/or whether the corrective action has a cost-effective payback period.

Question 33: Your budget states that if you make adjustments to the \$50 million per year figure given the Committee several years ago to include the backlog needs for the Zoological Park and Front Royal facilities that you would need \$60 million per year. If this is the true need, why is your budget request only \$47.9 million?

Answer: The \$47.9 million request for FY 2000 represents an increase over prior annual funding levels and represents a balance of competing priorities within the Institution's budget

Question 34: The Committee has provided \$145 million of the \$250 million estimate since fiscal year 1996 for the backlog. At this rate, will the goal be met sooner than 10 years?

Answer: The Smithsonian appreciates the Committee's support in providing increased funding in R&R since 1996, and has applied much of the funding toward reducing the previously reported \$250 million critical backlog. However, approximately \$30-35 million in new repair and code compliance requirements are identified each year. This work must either be completed, or added to the backlog.

In order to decrease the backlog, annual funding would have to be greater than the additional yearly requirements. The 10-year estimate for bringing the backlog under control was based on an annual funding level \$50 million as recommended by the Commission on the Future of the Smithsonian Institution.

Question 35: You state in your budget that of the \$47.9 million for major repair and rehabilitation only \$17.9 million is to be used on the most critical buildings the National Museum of Natural History (\$9 million), the American Art and Portrait Gallery (\$8 million) and the Zoological Park (\$900,000). How is the balance of \$30 million proposed to be used?

Answer: The Institution plans to use \$6.3 million for code compliance and security projects, which include fire detection and suppression, access, safety, and security work. Also, \$23.7 million will be expended on infrastructure repairs and modifications, which include general repairs; façade, roof and terrace repairs; utility systems repairs; advanced planning and inspection; and alterations and modifications. A detailed listing of the projects planned by building is being provided to the Subcommittee staff for their files.

Question 36: You acknowledge in your budget that Natural History, the Patent Building, the Castle and the Zoo are the oldest buildings with the greatest need of serious repairs. If this is the case, then why isn't more of the \$47.9 million request devoted to those needs?

Answer: Facilities planning must incorporate the timely renewal of the most deteriorated buildings, yet achieve some balance to coordinate the ongoing repairs required to maintain current conditions in the newer buildings. The very magnitude and complexity of the work contemplated for the buildings in the worst condition is a formidable one.

Several years of planning and design must precede actual construction, in order to identify and resolve the many logistical considerations, including how to accommodate ongoing operations in another location during the construction period. This process could not begin until the Institution had a funding level that would allow sufficient resources to be devoted to this effort, with assurance that funding for actual construction would be available when needed.

Planning for renovation of the National Museum of Natural History was completed several years ago, and portions of the work have been designed and completed. The remaining work, some of which has now been designed, will be undertaken in phases over the next eight to ten years to minimize disruption to the activities in the building. Planning and design of the work required for the Patent

Office Building and the Arts and Industries Building is also underway, and planning for the Smithsonian Castle has begun.

The Institution has determined that it will be most cost effective in the long term to sequence the renovation of these three buildings so that each building can be renovated all at once, while using the same "swing" space for each building's occupants in turn. The FY 2000 request includes the first increment of funding for the Patent Office Building renovation, another phase of the National Museum of Natural History renovation, and funds to begin planning and design of several projects at the National Zoological Park. Renovation of the Arts and Industries Building will begin in FY 2003, the year the Patent Office Building renovation is completed.

Question 37: Please provide details on how the \$6 million requested for the National Zoological Park will be used?

Answer: The requested funds will be used for major capital renewal (\$900,000), Code Compliance and Security projects (\$1,300,000), and Infrastructure Repairs and Modifications (\$3,800,000). A copy of the detailed five-year Repair, Restoration and Alteration of Facilities program, which identifies the projects planned by facility each fiscal year, is being provided to the Subcommittee staff. The Zoo's program is now included in this listing.

Question 38: Can you provide for the record in chart form by fiscal year and project, how the appropriated funds for Repair and Rehabilitation have been used since fiscal year 1996?

Answer: The chart on the following page details obligations of R&R funds by major project and category from FY 1996 through FY 1998. The Zoo's information is reported separately, as the funds were appropriated separately during those years.

REPAIR AND RESTORATION OBLIGATIONS

(\$ millions)

CATEGORY/PROJECT	FY 1996	FY 1997	FY 1998
REPAIR & RESTORATION OF BUILDINGS			
NMAH Major Capital Renewal	.9	.6	.1
NMNH Major Capital Renewal	2.5	7.7	1.8
SIB/AIB Major Capital Renewal	0	1.0	.3
AAPG Major Capital Renewal	.4	.6	6.7
General Repair	4.3	6.6	6.0
Facade, Roof, & Terrace	3.1	1.3	30.3
Fire Detection & Suppression	1.4	.7	.4
Access, Safety & Security	5.1	3.2	4.0
Utility System Repair	2.1	4.3	3.4
Advance Planning & Inspection	1.6	1.1	2.5
TOTAL, Repair and Restoration of Buildings	21.4	27.1	55.5
NATIONAL ZOOLOGICAL PARK R&R			
Major Capital Renewal		0	.7
General Repair		1.6	1.6
Facade, Roof, & Terrace		.6	1.3
Fire Detection & Suppression		.1	.1
Access, Safety & Security		.2	.2
Utility System Repair		1.9	1.0
Advance Planning & Inspection		0	0
TOTAL, National Zoological Park R&R	2.2*	4.4	4.9
GRAND TOTAL	23.6	31.5	60.4

* In FY 1996, the Zoo did not categorize projects in the same way as the rest of the Institution. Therefore, only the total obligations are shown for that year.

Question 39: How much of those funds were used for the major work included in the \$250 million workload presented to the Committee several years ago compared with minor repair work?

Answer: Approximately \$53 million was used since FY 1996 for major capital renewal work and other critical backlog requirements such as roof replacement at the Patent Office Building, and skylight/window wall replacement at the National Air and Space Museum.

Question 40: Your budget details the long range construction program for the Institution which includes \$4.8 million for the Environmental Research Center and \$1 million for an Aquatics Exhibit at the Zoo.

Are these new buildings? If so, please provide details on why these proposed requests should be initiated while the significant backlog problems are yet to be resolved.

Answer: The work planned at the Smithsonian Environmental Research Center (SERC) and the National Zoological Park (NZIP) represent needed investments in the physical plant to maintain the vitality of important programs. Like many organizations, the Smithsonian must address multiple obligations and competing priorities. Maintenance, repair and restoration of the historic public buildings that it occupies is of high priority among these as is the provision of adequate and appropriate facilities in which to conduct important research and exhibit programs.

SERC is the Institution's major center for ecological research and environmental education. SERC conducts long-term interdisciplinary studies on aquatic, terrestrial and atmospheric systems which provide scientists and legislators the information needed to make decisions on the profound environmental issues of the day. Efficient facility infrastructure is required to support the research program and to serve as an example of environmental stewardship to corporate, private and governmental entities. The project planned for FY 2001-2002 includes construction of a central utilities plant to replace existing individual building heating and air conditioning units, installation of stormwater management structures to control runoff from the main research facilities, and improvements to the electrical system, sewage treatment facilities, and roadways serving the site.

The Aquatics Exhibit at the National Zoological Park explores the wonder of water--the cradle of life--in its many forms, how it shapes life on earth and sculpts the earth, the adaptations needed to live in water, water quality issues, and how we use water. In addition to renovating a previously closed area, this exhibit brings to

life the world of water while introducing visitors to a theme which will be integrated throughout the Zoo in the coming years. This exhibit is significant because the Zoo must keep up with advances in zoo exhibits elsewhere in the United States to maintain its national status and to fulfill its educational and conservation mission. Exhibits at zoos, unlike those at art galleries and museums, require construction activities rather than internal changes. Appropriations of \$2.4 million received between FY 1993 and FY 1995 funded planning and conceptual design, and will be used for exhibit design and to begin site work. The Institution plans to seek \$1 million in FY 2001 to complete site work, including restoration of the pond area, preparations of the wetlands area, and preparations for plantings. The National Zoological Park plans to supplement appropriations with private funds for the exhibit project.

Question 40a: Of the \$145,000,000 appropriated to this account since fiscal year 1996, how much of that has been expended?

Answer: Of the \$145,000,000 appropriated between FY 1996 and FY 1999, more than \$113 million had been obligated as of March 15, 1999. The remainder will be used this year for projects now under design or in various stages of the procurement process.

NATIONAL MUSEUM OF THE AMERICAN INDIAN MALL MUSEUM

Question 41: The budget includes \$19 million, the final increment needed to complete the National Museum of the American Indian Mall Museum. How much of the \$54 million in construction funds that Congress has appropriated to date have been obligated?

Answer: The Smithsonian has obligated a total of \$11 million of the funds appropriated for the National Museum of the American Indian Mall Museum.

Question 42: Last year there were serious problems with the contractor and the architect. Was any time and money lost due to those difficulties and is the project still on schedule?

Answer: The Institution has been able to make up time to restore the original schedule for the National Museum of the American Indian Mall Museum project and still plans to break ground for the building late this Spring. The cost of the project is likely to increase, although we won't know the full impact until the legal issues relating to the architect's claim and the Smithsonian's counter claim are resolved. The Institution plans to cover the increased costs through additional fund raising, and will not seek additional Federal construction funds beyond the \$19 million requested in FY 2000.

GENERAL QUESTIONS

Question 43: The *Washington Post* recently reported that the Smithsonian's bid was not selected for the purchase of the Woodward and Lothrop building. Does the Smithsonian have another strategy in mind?

Answer: SI is pursuing other options in the vicinity of the Patent Office Building to provide space to house the National Museum of American Art, the National Portrait Gallery, and the Archives of American Art offices.

Question 44: The Committee provided \$3 million from the Millennium funds to help restore the Star Spangled Banner. What is the status of that project?

Answer: The Star-Spangled Banner Project has progressed according to plan. On December 1, 1998, the Flag was taken down from its display in the Museum of American History and two days later, December 3, 1998, the History Channel aired a one-hour documentary on the Flag and this historic project. After a brief period of examination and documentation in the Flag Hall, the Flag was rolled, crated and moved into a new conservation laboratory specially built for this purpose, because no other lab at the Smithsonian could accommodate the 30x34-foot flag. It will be worked on by a team of conservators for approximately three years and reinstalled in a new showcase for exhibit in 2002.

The conservation lab is located on the second floor of the Museum not far from where the Flag was displayed. It has a window wall fronting the adjacent conservation exhibition that will enable visitors to observe work in progress. In late April 1999, this small, temporary exhibition will be installed in the hall opposite the lab window, providing visitors an opportunity to see both work on the Flag itself and an explanation of the context in which it was created and imbued with meaning. Conservation research currently underway will provide the basis for the exhibition and preservation techniques which will be employed when the Flag is reinstalled in 2002.

Question 45: What progress has been made on the Smithsonian's national capital campaign and how do you propose to use those funds?

Answer: As of the end of FY 1998, the Campaign for America's Smithsonian has raised \$92.9 million in new gifts, new pledges, non-government grants, and deferred gifts toward the campaign goal. The Smithsonian Board of Regents and the Smithsonian National Board (SNB) voted to endorse the launch of a national capital campaign for the Smithsonian Institution. The Regents subsequently voted to appropriate \$5 million from the Smithsonian endowment over the next two years to finance the launch of the capital campaign.

The Smithsonian National Board Campaign Planning Committee/ Smithsonian Fund for the Future met on several occasions over the year and discussed campaign planning, policy issues, volunteer organization for the campaign, and budget strategy.

Capital Campaign Progress

Strategic Plan completed - A road map for implementing the campaign was drafted and distributed. It includes the draft Smithsonian-wide campaign case statement, a timetable, a proposed gift pyramid, volunteer structures, copies of new policies on foundation/corporate/individual prospect solicitation, and donor naming opportunities and recognition.

Powell Tate Company - A communications firm has been engaged to assist the Smithsonian in campaign message development and create some key marketing ideas. The Powell Tate team has interviewed and presented their findings to members of the Smithsonian National Board, the Washington Council, and the Smithsonian directors and development community.

E. Burr Gibson - Mr. E. Burr Gibson has been retained as campaign counsel. He is executive Chairman of Marts & Lundy and a veteran of hundreds of campaigns, including those at the University of California, Berkeley, the University of Michigan, and the Metropolitan Museum of Art.

Mark A. Thoreson - After a nationwide search, the Smithsonian hired a capital campaign director, who will report to the Executive Director for Development. Mr. Thoreson will work with the internal Smithsonian development community, helping the museums and research institutes develop strong case statements, articulate their capital needs and organize their prospects.

Campaign Capital and Current Needs Working Goal: \$625 million

The Smithsonian has set a minimum \$150 million goal for endowment support to create curatorial and research positions, acquire more art and artifacts, and provide fellowships for study and conservation. Many concerts, lecture series, and other public programs will be available freely to all through endowment funds, and a wider array of ticketed lectures, seminars and other programs will also be possible. These programs will continue in perpetuity through the generous endowment support of donors.

In order to house the vast Smithsonian collections and accommodate their ongoing growth, a campaign goal of \$200 million has been set for restoring older buildings and constructing new facilities.

The National Air & Space Museum Dulles Center and the National Museum of American Art/National Portrait Gallery/Archives of American Art campaigns will secure new storage and staff venues for these units to exhibit the full depth of their collections and make much more of them available to the public in the Patent Office Building. The National Museums of Natural History and American History are both in the process of major overhauls to their existing structures. Natural History will renovate its Mammal Hall and build a new and much larger Discovery Center for children; American History will construct a breathtaking new Flag Hall with the newly restored historic Star-Spangled Banner as its centerpiece.

A complex the size of the Smithsonian has an ongoing need for capital programs. A total of \$150 million has been designated to fund exhibitions, conservation, collections, research, education and outreach as crucial components of the Institution's mission "for the increase and diffusion of knowledge."

A minimum of \$125 million in gift annuities, charitable remainder trusts and bequests will secure the future of the Smithsonian well into the next century. These funds will enable future Secretaries to address the most pressing needs of the Institution, as well as continue to innovate and build on its strong exhibition and outreach components.

Question 46: Several years ago the Smithsonian was discussing new strategies for their business ventures including the magazine, museum shops and others. How are the Smithsonian businesses performing and what changes if any has the Institution made to become more cost-effective, innovative?

Answer: The Smithsonian business activities performance levels have remained relatively stable over the past several years with the exception of the Smithsonian Institution Press. The Institution reorganized the Press in FY 1998, closing the direct mail functions of the business. The University Press will continue to operate as a programmatic activity under the auspices of the Provost.

Revenue generation has been static. However, a series of studies has presented convincing evidence that there is significant growth potential. In response, the Board of Regents approved the creation of Smithsonian Business Ventures in September 1998. This entity will be a separate organization within the Institution reporting to a Business Advisory Board that in turn reports to the Secretary. The intent of this action is to create an entity that operates on a business-

like footing with a goal to generate substantial increases in revenue for the Institution. Additional revenue generated will be used to increase research, exhibitions and public programs throughout the Institution.

NEW SCIENCE AND RESEARCH EFFORTS

Question 47: A major percentage of the work that the Smithsonian does is research. The Committee notes that several months ago *Science Magazine*, the most prestigious science publication in the world recognized the Smithsonian Institution for 10 ongoing research efforts.

Can you describe for the Committee several of these research efforts and their potential impacts on the public?

Answer:

Smithsonian Astrophysical Observatory (SAO)

Magnetic Resonance Imaging Research - Smithsonian research leading to new medical uses of Magnetic Resonance Imaging (MRI) was cited by the American Institute of Physics as one of the major breakthroughs in physics research in 1998. The journal *Physical Review* (October 1998) reported that Smithsonian scientists working on an astrophysics experiment discovered that an inert gas, when inserted into the chest cavity, can emit radio signals that reproduce images in the lungs, sinuses, and other parts of the body that are surrounded by gas molecules. Previous MRI technology could not access areas affected by gas molecules. This research, known as "low-field MRI" has led to building simpler, smaller-scale, and lower-cost mobile MRI machines for use in hospitals. The new medical technology which is in development will have applications ranging from detection of hard-to-reach tumors to use by people with pacemakers.

Smithsonian Environmental Research Center (SERC)

Research on Origins and Impact of Invasive Species. *The Washington Post* (2/3/99) reported that through investigations of ballast water on ships in the Chesapeake Bay, Smithsonian scientists have identified non-native species of bacteria that can cause cholera. The research forms part of the largest research project in the U.S. dealing with the origin and impact of alien, invasive species in coastal marine and estuarine systems. Non-native animals and plants can endanger native species, disrupt food chains, and cause environmental and infrastructure damage exceeding, according to one estimate, \$120 billion in 1998. The research has produced tools and strategies that are being tested as means to control invasive species.

Research on Nutrient Runoff - One of the biggest environmental problems affecting the Chesapeake Bay and other U.S. coastal waters is over-enrichment with nutrients. Smithsonian scientists have studied discharges from all of the major watersheds in the U.S. They found that, while damaging nutrient discharge is predominantly linked to agricultural land use and soil erosion, stream-side forests, restored wetlands, and other pathways of water flow can significantly reduce nutrient runoff, thereby controlling proliferation of plankton and its harmful effects of fisheries and human health. Smithsonian scientists also are studying ways to detect the toxic plankton organism, *Pfiesteria*, which kills fish and poisons humans who come into contact with it.

Mathematical models developed at SERC have quantified the importance of stream-side forests and wetlands. The latter can retain nutrients from discharge into coastal waters while at the same time providing significant wildlife habitats. Research in tropical zones shows that excess nutrient discharge is absorbed by mangrove forests, the dominant coastal wetlands in the tropics. The SERC research will lead to better strategies for managing harmful levels of nutrient over-enrichment of coastal waters.

National Museum of Natural History (NMNH)

Lyme Disease - How long has Lyme disease been present in eastern North America? Museum collections of ticks from the 1940's have been analyzed for the genetic indicators of the bacterium responsible for the disease. Research has revealed that there is solid evidence that Lyme disease has been present for at least three decades, which is long before it was recognized by doctors. Furthermore, older specimens show that Lyme disease has been present at some sites from much longer. The evidence from the museum specimens has allowed researchers to trace the spread of the tick and the disease it bears.

Study of tree which produces cancer drug - The natural product taxol, a powerful drug used to fight ovarian and breast cancer, comes from the bark of the Pacific Yew, *Taxus brevifolia*. It takes three trees to provide enough taxol for one cancer patient, so harvesting of large amounts of taxol was a major barrier to developing this useful drug. Understanding of the evolutionary relationships (systematics) of the Pacific Yew and its close relatives led scientists to investigate the European Yew, *Taxus baccata*. This species has enough taxol in a small quantity of leaves to produce the drug at lower cost, with no harm to the tree itself. Without information on the evolutionary relationships of these Yew trees, it might have taken years and a lot of testing to identify which of the many yew species has large quantities of taxol.

Studies to help prevent back and neck pain - In regard to America's aching backs, a physician anthropologist who teaches at Mills College and specializes in disorders of the spine is studying the Maring people of coastal Papua New Guinea using an extensive and well documented collection of motion picture film housed at the Human Studies Film Archives at the National Museum of Natural History. He is studying posture and movement in both work and dance of the Maring in order to develop new techniques for prevention and cure of mechanical back and neck pain and dysfunction.

Identification of citrus pest - In 1993, a Smithsonian entomologist identified a serious citrus pest Gracillariidae: *Pyllocnistis citrella* Stainton in Florida that was apparently introduced on infested nursery stock from southeast Asia. This leaf-mining moth has since spread rapidly through most citrus-growing regions in the United States, except California and the Caribbean. The species could only be identified in this country at the National Museum of Natural History because the National Collections contained the only known specimens of this pest in the USA.

These are just a very few examples of research carried out at the Smithsonian Institution that have the potential to benefit mankind.

Question 48: The Committee has long supported the Smithsonian's Tropical Research Institute in Panama. Can you briefly describe some of their critical research in the area of forestry and how this information may have a direct application to the forestry industry in this country?

Answer: For almost two decades, Smithsonian scientists have monitored the fate of more than a third of a million individual trees in a 125-acre parcel of Panamanian forest. This project represented the first attempt in the world to measure every tree down to the sapling size over such a wide area. This ambitious survey has proved especially challenging because of its tropical location, where 2.5 acres of forest can contain almost as many tree species as are found in all of the United States and Canada. The dramatic findings from this long-term study have made a major impact on our understanding of tropical forest diversity and dynamics, as was illustrated by a recent cover article of *Science Magazine* (January 22, 1999). In fact, the results have proved so consequential that other research institutions throughout the United States and around the world – working with Smithsonian scientists – have replicated similar large-scale monitoring plots in other tropical forests. Presently, 16 Forest Dynamics Plot Programs exist in 13 countries in Latin America, Asia and Africa. Jointly, they are monitoring about two and a half million trees of 5,500 species, representing 10 percent of all tree species in the tropics.

In 1990, STRI unified this network under the umbrella of the Center for Tropical Forest Science (CTFS), based at the Smithsonian in Washington DC. The role of CTFS has been to ensure a common research protocol across sites, design computer programs for data management and analysis, provide training and technical assistance, facilitate network communications, and translate results for use in the conservation and management of tropical forests. The CTFS network forms an indispensable foundation both for regional and global forest studies. The ability to address forest conservation on a worldwide scale depends on insights and background data only obtainable through a program of this magnitude. Although the CTFS' research capacity is unique, it requires additional resources to ensure its long-term survival.

The Smithsonian's research program in the tropics represents a powerful tool to understand the planet's tropical forests and address major forest conservation and management issues. For example, Smithsonian researchers are investigating the response of tropical plants to changes in their environment to improve the ability to predict how tropical forests respond to global change. At the same time, economists, policy-makers and industry are drawing upon CTFS data to devise forest management strategies to mitigate carbon build-up in the atmosphere. In Central Africa, CTFS scientists are discovering and describing new tree species, and investigating their potential as new medicines. In Panama, CTFS scientists have been selecting and testing native tree species for reforestation degraded pastureland in the Panama Canal watershed. Using forest plot data from Malaysia, CTFS scientists and economists have developed logging models in an effort to discover principles of sustainable forest management for tropical timber, carbon storage, and biodiversity conservation. The Smithsonian's fundamental research on tropical forests is providing the foundation for such diverse applications that benefit conservation, industry, and humankind.

Question 49: The Committee understands that the STRI is working cooperatively with the Department of Energy on this forestry research. Can you describe that partnership?

Answer: Another significant innovation uniquely at STRI's disposal is Free-Air Carbon dioxide Enrichment (FACE) technology. FACE research, sponsored by the US Department of Energy and several academic partners including McGill and Duke universities, lays the scientific foundation for understanding the impact of future emissions of carbon dioxide (CO₂). The program in Panama will enable scientists for the first time to determine the extent to which tropical forests would be able to absorb increasing levels of CO₂, to predict the influence of elevated CO₂ on forest composition, and to estimate possible influences of CO₂ in altering tropical seasonal processes.

Question 50: The Smithsonian research in Panama has for many years focused on coral reefs. I note that there were recent articles in the *Washington Post* and *New York Times* on the massive die-off of coral reefs.

Can you describe your research efforts in this area, and address that world-wide problem with regards to the loss of these reefs and the impact on the public?

Answer: The Smithsonian research in Panama has for many years focused on coral reefs. The dramatic decline of coral reefs during recent decades is of major economic and scientific concern. Long admired for their spectacular beauty and extraordinary biodiversity, coral reefs are also among the most productive, commercially most valuable, and ecologically most fragile of Earth's tropical ecosystems. About 10 percent of the world's tropical fisheries originate in coastal areas containing reefs. Moreover, a considerable proportion of the US tourism industry is concentrated in Hawaii, the Florida Keys, and reef-containing nations of the western Atlantic.

Worldwide, coral reefs have declined recently as a result of the rapid growth of human populations and of technologies used in many tropical and subtropical countries. Poor land-use practice, excessive nutrification, and over-exploitation of reef-related resources are among the most serious threats. Recently, coral disease has emerged as an important threat, and in the past year elevated water temperatures resulted in unprecedented coral bleaching and subsequent mortality. Presently, at greatest risk are coastal coral reefs throughout South and Southeast Asia, East Africa and in the Caribbean, where degradation in shallow water has been estimated recently at 50 percent.

Included in the latter percentage many reef sites that have been studied for decades by scientists at the Smithsonian Institution. Through the Smithsonian's strong commitment to research and public education, the Institution's scientists and educators have developed a broad spectrum of programs to increase knowledge and public awareness about the biological value of reefs and develop efforts that show promise of helping to restore and conserve these vital global reserves.

In June 1996, the Smithsonian Tropical Research Institute located in the Republic of Panama organized and hosted the Eighth International Coral Reef Symposium, the single most important occasion this decade for directing scientific and public attention toward reef preservation issues.

At this symposium, the Smithsonian also launched a bilingual, international traveling exhibit, *Our Reefs: Caribbean Connections*, highlighting the marine environment in the western Atlantic. The exhibit has appeared at the Miami

International Airport, which, with over 37 million passengers a year, is a major gateway to the Caribbean.

Some of the most significant research on coral reefs is conducted by Smithsonian scientists. For example, STRI scientist Nancy Knowlton and colleagues have made fundamental contributions to understanding the diversity of corals and their complicated dependence on symbiotic algae. The discovery of a correlation between genetics and sensitivity to temperature stress provides a key tool for understanding the coral bleaching that has plagued reefs recently and especially this year.

National Museum of Natural History (NMNH) botanists Mark and Diane Littler investigated the disease-induced mass mortality of crustose coralline algae on coral reefs and provided the rationale for the conservation of herbivorous fish stocks.

NMNH coral reef geologist Ian MacIntyre continues a long-term program of examining coral reef cores to elicit the sequential history and cyclical patterns of coral reef perturbations.

NMNH paleobiologist John Pandolfi has made a fundamental contribution to our understanding of the maintenance of diversity of coral reefs over spatial and temporal scales.

NMNH fish systematists continue to discover and describe coral reef fish species that are new to science.

STRI scientist Harris Lessios conducted a classic study of the mass mortality of a major sea urchin through a disease that swept through the Caribbean. The absence of the sea urchin allowed the overgrowth and death of many reefs by seaweeds. This provides a model example of how natural disturbances interact with anthropogenic stress, in this case over-fishing, to create an ecological disaster.

More generally, much of our understanding of the enormous number of species on reefs has emerged from the studies of Smithsonian scientists. Long-term studies of the interconnectedness of mangrove, sea grass and coral reef systems have been undertaken by Natural History Museum scientist Klaus Ruetzler and colleagues at the Museum's Carrie Bow Cay station in Belize. These tropical wetlands are vital breeding grounds for numerous marine animals and plants, including important commercial fishery species. SERC scientists Catherine Lovelock and Ikla Feller are also participating with STRI's Hector Guzman to conduct crucial long-term monitoring of these habitats in Panama under STRI's

Marine Environmental Science Monitoring program. These coral reef coastal habitats have become the focus of major protective programs in several countries and through the World Bank, UNESCO, and the InterAmerican Development Bank, among others, because of their social, commercial, and ecological importance.

Question 51: Can you describe the programs designed at the Smithsonian's Astrophysical Observatory for school children?

Answer: The Harvard-Smithsonian Center for Astrophysics Science Education Department (SED) develops curricula and materials that reflect current scientific and educational philosophy. SED identifies and addresses the needs of science teachers and students in elementary, secondary, and college science, with an emphasis on grades K-12. SED research materials are available through print and CD-ROM, on the Internet and television, by teleconferencing and at workshops and teacher conferences. Examples follow.

From the Ground Up is a series of investigations in physical science for middle and high-school students using the MicroObservatory online telescopes. MicroObservatory is a network of five automated telescopes that can be controlled over the Internet.

The telescopes were developed at the Harvard-SAO and were designed to enable students and teachers nationwide to investigate the wonders of the deep sky from their classrooms. The project is sponsored by the National Science Foundation, with additional in-kind contributions from the Eastman-Kodak Company and Apple Computer. Users of MicroObservatory are responsible for taking their own images by pointing and focusing the telescopes, selecting exposure times, filters, and other parameters. The educational value lies not just in the image returned by the telescope, but in the satisfaction and practical understanding that comes from mastering a powerful scientific tool. Observations can be set up in advance and run automatically.

MicroObservatory is designed to increase the student's familiarity with and access to telescopes, making astronomy a laboratory science just like biology, chemistry, and physics; to enable students to undertake a wide range of research projects, including collaborative projects with other students and with research scientists, and to determine the factors that optimize the educational value of remote scientific instruments on the Internet. The website address is <http://mo-www.harvard.edu/MicroObservatory/>.

Project Star is a high school physics science course based on astronomy that focuses on published curriculum.

Project Comtech is an innovative, modular, discovery-based curriculum for grades 7-9 technology students interested in basic electronics.

SAO Outreach for the general public includes popular lectures for adults and for children; “star parties” with telescopic viewing; and operation of a Visitor Center at the Whipple Observatory in Arizona. SAO also cosponsors free public lectures at the Museum of Science in Boston and at the National Air and Space Museum in Washington, usually in a series based on a major theme in modern astrophysics. SAO annually provides thousands of free popular science publications, reading lists, and brochures on selected topics to teachers and students nationwide. A 24-hour recorded telephone service provides information to visible celestial phenomena for amateur astronomers. SAO contributes to the electronic “diffusion of knowledge” by providing an extensive collection of astronomical images and information via the Internet to users of the World Wide Web.

Question 52: Several government agencies have begun to integrate a process known as Value Engineering into their construction projects. Do you believe this process could be utilized in the planning processes for construction and exhibition projects within the Institution to achieve greater fiscal management of these projects? If not, please explain why this process would not be feasible for the Institution.

Answer: The Smithsonian agrees that value engineering is a useful tool, and has used it in the planning, design and construction of a number of significant projects.

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